

```

ring nodes :
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28
chain bonds :
2-17 14-18
ring bonds :
1-2 1-6 1-6 2-3 3-4 4-5 5-6 5-11 6-7 7-8 7-13 8-9 8-16 9-10 11-12 12-13 13-14 14-15 15-16 17-19 17-23 18-24 18-28 19-20 20-21 21-22 22-23 24-25 25-26 26-27 27-28
exact bonds :
2-17 14-18
normalized bonds :
1-2 1-6 1-10 2-3 3-4 4-5 5-6 5-11 6-7 7-8 7-13 8-9 8-16 9-10 11-12 12-13 13-14 14-15 15-16 17-19 17-23 18-24 18-28 19-20 20-21 21-22 22-23 24-25 25-26 26-27 27-28
isolated ring systems :
containing 1 :

```

```

Match level :
1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom 11:Atom 12:Atom 13:Atom 14:Atom 15:Atom 16:Atom 17:Atom 18:Atom 19:Atom 20:Atom 21:Atom 22:Atom
23:Atom 24:Atom 25:Atom 26:Atom 27:Atom 28:Atom

```

L1 STRUCTURE UPLOADED

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=> s 11 sss full
FULL SEARCH INITIATED 10:52:14 FILE 'REGISTRY'
FULL SCREEN SEARCH COMPLETED - 69792 TO ITERATE

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100.0% PROCESSED 69792 ITERATIONS 951 ANSWERS
SEARCH TIME: 00.00.01

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L2 951 SEA SSS FUL L1

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=> s 12 268 L2

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=> 13 and (electroluminescent or electroluminescence or (light emitting) or (light emission) or oled)
  107560 ELECTROLUMINESCENT
  8 ELECTROLUMINESCENTS
  107571 ELECTROLUMINESCENT
  (ELECTROLUMINESCENT OR ELECTROLUMINESCENTS)
  29473 ELECTROLUMINESCENCE
  29 ELECTROLUMINESCENCES
  29477 ELECTROLUMINESCENCE
  (ELECTROLUMINESCENCE OR ELECTROLUMINESCENCES)
  5 ELECTROLUMINESCENSE
  29478 ELECTROLUMINESCENCE
  (ELECTROLUMINESCENCE OR ELECTROLUMINESCENSE)
  1450825 LIGHT
  14358 LIGHTS
  1455624 LIGHT
  (LIGHT OR LIGHTS)
  164916 EMITTING
  286 EMITTINGS
  164978 EMITTING
  (EMITTING OR EMITTINGS)
  93905 LIGHT EMITTING
  (LIGHT(W)EMITTING)
  1450825 LIGHT
  14358 LIGHTS
  1455624 LIGHT
  (LIGHT OR LIGHTS)
  657868 EMISSION
  125408 EMISSIONS
  718035 EMISSION
  (EMISSION OR EMISSIONS)
  19021 LIGHT EMISSION
  (LIGHT(W)EMISSION)
  9419 OLED
  4663 OLEDs
  11744 OLED
  (OLED OR OLEDs)
L4 193 L3 AND (ELECTROLUMINESCENT OR ELECTROLUMINESCENCE OR (LIGHT EMITTING) OR (LIGHT EMISSION) OR OLED)

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=> 14 and (py<=2005 or ay<=2005)
  26345038 FY<=2005
  5579205 AY<=2005

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L5 59 L4 AND (FY<=2005 OR AY<=2005)

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YOU HAVE REQUESTED DATA FROM 59 ANSWERS - CONTINUE? Y/(N):y

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L5 ANSWER 1 OF 59 CAPLUS COPYRIGHT 2011 ACS on STN

Accession Number  
2011313523 CAPLUS Full-text

Document Number  
154349467

Title  
Organic electroluminescence devices

Author/Inventor  
Kawamura, Hisayuki; Kubota, Mineyuki; Funabashi, Masakazu

Patent Assignee/Corporate Source  
Idemitsu Kosan Co., Ltd., Japan

Source  
Jpn. Tokkyo Koho, 44pp. CODEN: JTXXFF

Document Type  
Patent

Language  
Japanese

Patent Information

| PATENT NO.    | KIND | DATE     | APPLICATION NO. | DATE     |
|---------------|------|----------|-----------------|----------|
| JP 4653469    | B2   | 20110316 | JP 2004-348675  | 20041201 |
| JP 2006156888 | A    | 20060615 |                 |          |

|                |    |          |                  |          |
|----------------|----|----------|------------------|----------|
| WO 2006059512  | A1 | 20060608 | WO 2005-JP21469  | 20051122 |
| CN 101069299   | A  | 20071107 | CN 2005-80041191 | 20051122 |
| CN 100565964   | C  | 20091202 |                  |          |
| US 20060158102 | A1 | 20060720 | US 2005-288281   | 20051129 |
| US 7528542     | B2 | 20090505 |                  |          |
| KR 2007091280  | A  | 20070910 | KR 2007-7012284  | 20070531 |
| JP 2010283384  | A  | 20101216 | JP 2010-198577   | 20100906 |

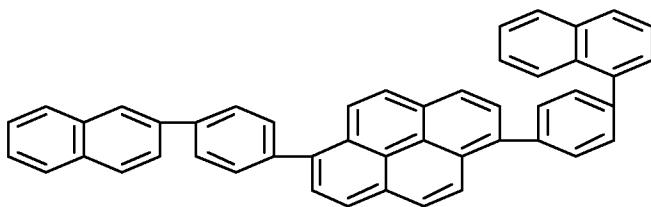
#### Abstract

Disclosed is an organic electroluminescent device comprising at least an anode, a cathode and an organic light-emitting layer interposed between the electrodes, wherein the organic light-emitting layer contains ≥1 host materials, a hole-trapping dopant and an electron-trapping dopant. By having the hole-trapping dopant and the electron-trapping dopant coexist in the organic light-emitting layer, the organic electroluminescent device can have a longer life.

#### Hit Structure

CAS Registry Number  
870774-17-7 CAPLUS

Chemical or Trade Name  
Pyrene, 1-[4-(1-naphthalenyl)phenyl]-6-[4-(2-naphthalenyl)phenyl]- (CA INDEX NAME)



OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD  
(1 CITINGS)

L5 ANSWER 2 OF 59 CAPLUS COPYRIGHT 2011 ACS on STN

Accession Number  
2008-920965 CAPLUS FullText

Document Number  
151:159940

Title  
Organic electroluminescent device allowing adjustment of chromaticity

Author/Inventor  
Kinoshita, Masaru

Patent Assignee/Corporate Source  
Fuji Photo Film Co., Ltd., Japan

Source  
U.S. Pat. Appl. Publ., 13 pp. CODEN: USXXCO

Document Type  
Patent

Language  
English

Patent Information

| PATENT NO.     | KIND | DATE     | APPLICATION NO.  | DATE     |
|----------------|------|----------|------------------|----------|
| US 20080185971 | A1   | 20080807 | US 2006-579061   | 20061027 |
| TW 267822      | B    | 20061201 | TW 2004-112026   | 20040429 |
| WO 2005106835  | A1   | 20051110 | WO 2004-JP6354   | 20040430 |
| CN 1977301     | A    | 20070606 | CN 2004-80042922 | 20040430 |
| CN 100487776   | C    | 20090513 |                  |          |
| KR 2007020051  | A    | 20070216 | KR 2006-7024970  | 20061128 |
| KR 836542      | B1   | 20080610 |                  |          |

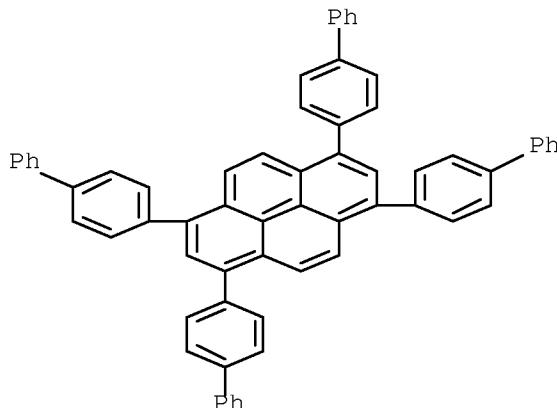
#### Abstract

Organic electroluminescent devices comprising an organic electroluminescent element comprising electrodes with an organic electroluminescent layer emitting white light at a chromaticity corresponding to a drive c.d. provided between the electrodes; and a drive unit driving the organic electroluminescence element by application of current or voltage and controlling the drive current and the period the current or voltage is applied per unit of time according to a chromaticity adjustment input, wherein in response to a first chromaticity adjustment input the drive unit controls, resp., the drive current or voltage to be a first current or voltage and the application period to be a first period, and in response to a second chromaticity adjustment input the drive unit controls, resp., the drive current or voltage to be a second current or voltage larger than the first current or voltage and the application period to be a second period shorter than the first period. Emission chromaticity can be adjusted while the brightness is kept constant. A liquid crystal display device employing an organic electroluminescent device as a backlight unit are also described.

#### Hit Structure

CAS Registry Number  
790273-07-3 CAPLUS

Chemical or Trade Name  
Pyrene, 1,3,6,8-tetrakis([1,1'-biphenyl]-4-yl)- (CA INDEX NAME)



OS.CITING REF COUNT: 5 THERE ARE 5 CAPLUS RECORDS THAT CITE THIS RECORD  
(9 CITINGS)

L5 ANSWER 3 OF 59 CAPLUS COPYRIGHT 2011 ACS on STN

Accession Number 2009573003 CAPLUS [Full-text](#)

Document Number 150:539:448

Title Preparation of aromatic amine derivatives as doping materials for organic **electroluminescent** devices

Author/Inventor

Funabashi, Masakazu; Kubota, Mineyuki

Patent Assignee/Corporate Source Idemitsu Kosan Co., Ltd., Japan

Source Jpn. Tokkyo Koho, 33pp.; Chemical Indexing Equivalent to 145:356527 (WO) CODEN: JTXXFF

Document Type Patent

Language

Japanese

Patent Information

| PATENT NO.     | KIND | DATE     | APPLICATION NO.  | DATE     |
|----------------|------|----------|------------------|----------|
| JP 4263700     | B2   | 20090513 | JP 2005-73474    | 20050315 |
| JP 2006256979  | A    | 20060928 |                  |          |
| WO 2006098080  | A1   | 20060921 | WO 2006-JP300516 | 20060117 |
| EP 1860096     | A1   | 20071128 | EP 2006-711796   | 20060117 |
| US 20060210830 | A1   | 20060921 | US 2006-336855   | 20060123 |
| US 7816017     | B2   | 20101019 |                  |          |
| KR 2007110362  | A    | 20071116 | KR 2007-7020953  | 20070913 |
| IN 2007CN04053 | A    | 20071123 | IN 2007-CN4053   | 20070917 |
| CN 101142169   | A    | 20080312 | CN 2006-80008634 | 20070917 |
| US 20110034733 | A1   | 20110210 | US 2010-854247   | 20100811 |

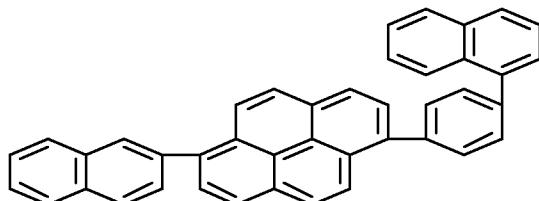
Abstract

The title compds. I [T1 = (A1)a; T2 = (A2)b; T3 = (A3)c; T4 = (A4)d; A1-A4 = H, Me, Et, etc.; a, b, c, d = 0-3; A5-A12 = Me, Et, Pr, etc.] are prepared. Thus, the title compound II was prepared from the coupling reaction of 6,12-dibromochrysene with bis(3,4-dimethylphenyl)amine. An organic **electroluminescent** device containing II showed blue light and luminous efficiency 7.1 cd/A under voltage of 6.5 V.

Hit Structure

CAS Registry Number 870774-21-3 CAPLUS

Chemical or Trade Name  
Pyrene, 1-(2-naphthalenyl)-6-(4-(1-naphthalenyl)phenyl)- (CA INDEX NAME)



OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD  
(2 CITINGS)

Accession Number

2007642430 CAPLUS [Full-text](#)

Document Number

14762066

## Title

Anthracene derivatives for use in organic electronic devices and their synthesis and the devices

## Author/Inventor

Heil, Holger; Buesing, Anne; Stoessel, Philipp

## Patent Assignee/Corporate Source

Merck Patent G.m.b.H., Germany

## Source

PCT Int. Appl., 57pp. CODEN: PIXXD2

## Document Type

Patent

## Language

German

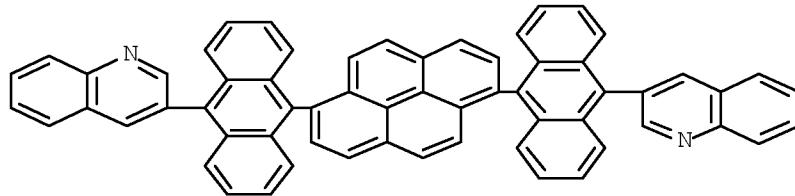
## Patent Information

| PATENT NO.      | KIND | DATE     | APPLICATION NO.      | DATE     |
|-----------------|------|----------|----------------------|----------|
| WO 2007065678   | A1   | 20070614 | WO 2006-EP11758      | 20061207 |
| DE 102005058557 | A1   | 20070614 | DE 2005-102005058557 | 20051208 |
| EP 1957606      | A1   | 20080820 | EP 2006-829379       | 20061207 |
| JP 2009518342   | T    | 20090507 | JP 2008-543731       | 20061207 |
| US 20080303423  | A1   | 20081211 | US 2008-96536        | 20080606 |

## Abstract

Compds. are described which comprise two substituted anthracene groups joined (at the 9 position) by  $\geq 1$  aromatic ring system and having at least a C5-30 (hetero)aromatic ring substituent at each 10 position, optionally with other substituents situated on the remaining positions. A method for synthesizing the compds. is described which entails forming the bonds between the anthracene groups and the aromatic groups using a Suzuki coupling reaction. The use of the compds. in electronic devices and devices employing the compds. (e.g., organic field-effect transistors, organic thin-film transistors, organic light-emitting transistors, organic integrated circuits, organic solar cells, organic field quenching devices, organic laser diodes, organic photoreceptors, and, especially, organic electroluminescent devices) are also described.

## Hit Structure

CAS Registry Number  
939973-71-4 CAPLUSChemical or Trade Name  
Quinoline, 3,3'-(1,6-pyrenediylid-10,9-anthracenediyil)bis- (CA INDEX  
NAME)

Accession Number  
2007637739 CAPLUS [Full-text](#)Document Number  
147:62058Title  
Organic blends for electronic devices, their use in electronic devices, especially electroluminescent devices, and the devicesAuthor/Inventor  
Vestweber, Horst; Stoessel, Philipp; Heil, HolgerPatent Assignee/Corporate Source  
Merck Patent G.m.b.H., GermanySource  
PCT Int. Appl., 61pp. CODEN: PIXXD2Document Type  
PatentLanguage  
German

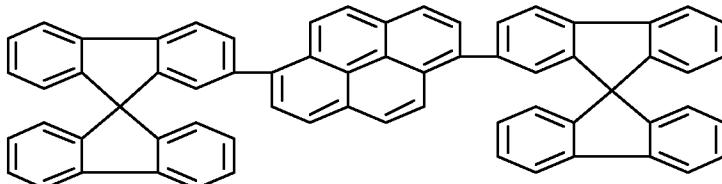
Patent Information

| PATENT NO.       | KIND | DATE     | APPLICATION NO.       | DATE     |
|------------------|------|----------|-----------------------|----------|
| WO 2007065547    | A1   | 20070614 | WO 2006-EP11026       | 20061117 |
| DE 1020050508557 | A1   | 20070614 | DE 2005-1020050508557 | 20051208 |
| EP 1957603       | A1   | 20080820 | EP 2006-818609        | 20061117 |
| JP 2009518831    | T    | 20090507 | JP 2008-543682        | 20061117 |
| US 20080297037   | A1   | 20081204 | US 2008-96492         | 20080606 |
| CN 101326260     | A    | 20081217 | CN 2006-80046146      | 20080606 |
| KR 2008082681    | A    | 20080911 | KR 2008-7016431       | 20080707 |
| IN 2008KN02737   | A    | 20090123 | IN 2008-KN2737        | 20080707 |

Abstract

Blends are described which comprise  $\geq 1$  tri(hetero)arylviny(hetero)arylamine compound and  $\geq 1$  anthracene derivative with C5-30 (hetero)aromatic substituents, including anthracene derivs. comprising two anthracene groups joined at the 9 position by a single bond or a bridging group selected from C1-40 bivalent groups, -O-, -S-, or -NH-. The use of the compds. in electronic devices and devices employing the compds. (e.g., organic field-effect transistors, organic thin-film transistors, organic light-emitting transistors, organic integrated circuits, organic solar cells, organic light quenching devices, organic laser diodes, organic photoreceptors, and, especially, organic electroluminescent devices) are also described. Methods for producing electroluminescent devices including forming films from the blends are also described.

Hit Structure

CAS Registry Number  
723285-22-1 CAPLUSChemical or Trade Name  
9,9'-Spirobi[9H-fluorene], 2,2'-(1,6-pyrenediyl)bis- (CA INDEX NAME)Accession Number  
2007585352 CAPLUS [Full-text](#)Document Number  
147:41936Title  
Luminescent material containing pyrene compound and light-emitting device employing itAuthor/Inventor  
Ogawa, Takashi; Tominaga, Takeshi; Murase, SeiichiroPatent Assignee/Corporate Source  
Toray Industries, Inc., JapanSource  
Jpn. Kokai Tokkyo Koho, 23pp. CODEN: JKXXAFDocument Type  
PatentLanguage  
Japanese

Patent Information

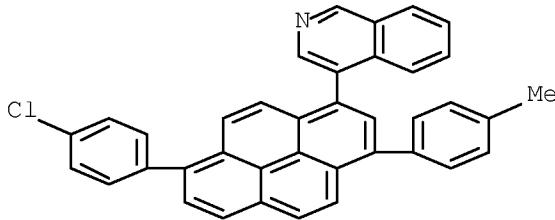
| PATENT NO.    | KIND | DATE     | APPLICATION NO. | DATE     |
|---------------|------|----------|-----------------|----------|
| JP 2007131723 | A    | 20070531 | JP 2005-325760  | 20051110 |

Abstract

The invention relates to a luminescent material and a light-emitting device employing it. The above material consists of the pyrene compound represented by the general formula I-II, where R1-R15 is selected from the fused rings formed between adjacency substituents, such as hydrogen, the alkyl group, the cycloalkyl group, and the heterocycle group, A is directly bonded to at least one of R1-R10; Y1-Y5 is selected from nitrogen or carbon atom; when one of Y1-Y5 is nitrogen atom, the substitute of R11-R15 on the nitrogen atom does not exist.

Hit Structure

CAS Registry Number  
936719-68-5 CAPLUSChemical or Trade Name  
Isoquinoline, 4-[8-(4-chlorophenyl)-3-(4-methylphenyl)-1-pyrenyl]- (CA INDEX NAME)



L5 ANSWER 7 OF 59 CAPLUS COPYRIGHT 2011 ACS on STN

Accession Number

20073585349 CAPLUS [Full-text](#)

Document Number

146:530861

Title

Luminescent material and light-emitting device employing it

Author/Inventor

Ogawa, Takashi; Murase, Seiichiro; Nagao, Kazuma

Patent Assignee/Corporate Source

Toray Industries, Inc., Japan

Source

Jpn. Kokai Tokkyo Koho, 22pp. CODEN: JKXXAF

Document Type

Patent

Language

Japanese

Patent Information

| PATENT NO.    | KIND | DATE     | APPLICATION NO. | DATE     |
|---------------|------|----------|-----------------|----------|
| JP 2007131722 | A    | 20070531 | JP 2005-325759  | 20051110 |

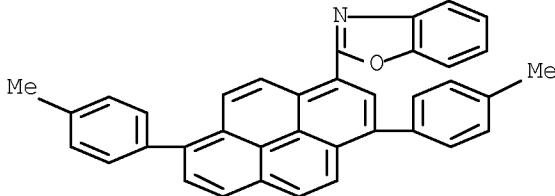
Abstract

The invention relates to a luminescent material and light-emitting device employing it. The above material consists of anthracene compound represented by I, where A is the direct bond, the arylene group, etc. and R1-R19 are H, the alkyl group, etc., at least one of R11-R18 is the alkyl group, the aryl group, etc., at least one of R11-R19 and R1-R10 is used for the connection with A.

Hit Structure

CAS Registry Number  
908011-69-8 CAPLUS

Chemical or Trade Name  
Benzoxazole, 2-[3,8-bis(4-methylphenyl)-1-pyrenyl]- (CA INDEX NAME)



OS.CITING REF COUNT: 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD  
(2 CITINGS)

L5 ANSWER 8 OF 59 CAPLUS COPYRIGHT 2011 ACS on STN

Accession Number

2007352951 CAPLUS [Full-text](#)

Document Number

146:390110

Title

Blue light-emitting materials and devices using pyrene compounds

Author/Inventor

Sugimoto, Kazunori; Murase, Seiichiro; Nagao, Kazuma

Patent Assignee/Corporate Source

Toray Industries, Inc., Japan

Source

Jpn. Kokai Tokkyo Koho, 27pp. CODEN: JKXXAF

Document Type

Patent

Language

Japanese

Patent Information

| PATENT NO.    | KIND | DATE     | APPLICATION NO. | DATE     |
|---------------|------|----------|-----------------|----------|
| JP 2007077185 | A    | 20070329 | JP 2005-263424  | 20050912 |

Abstract

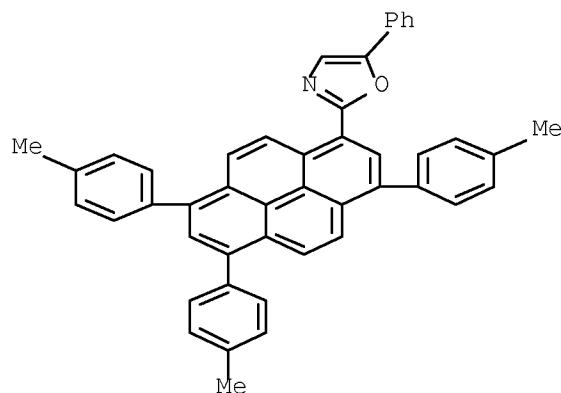
The materials contain pyrene compds. I (R1-R14 = H, alkyl, cycloalkyl, heterocyclic group, alkenyl, cycloalkenyl, alkynyl, alkoxy, alkylthio, arylether, arylthioether, aryl, heteroaryl, halo, CN, carbonyl, CO2H, oxycarbonyl, carbamoyl, amino, phosphine oxide; R1-R14 may form condensed ring with their adjacent groups;  $\geq 1$  of R1-R10 and  $\geq 1$  of R11-R14 = single bond; X1 = O, S, NR15; Y1-Y4 = N, C;  $\geq 1$  of Y1-Y4 = N and  $\geq 1$  of Y1-Y4 = C; R15 = H, alkyl, cycloalkyl, heterocyclic group, alkenyl, cycloalkenyl, alkynyl, aryl, heteroaryl, CN, carbonyl, CO2H, oxycarbonyl, carbamoyl). The devices having light-emitting layers between anodes and cathodes and emitting light by elec. energy contain the materials. The devices show high luminescent efficiency.

Hit Structure

CAS Registry Number  
908011-57-4 CAPLUS

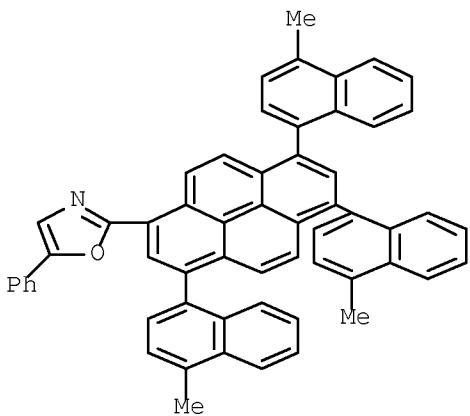
Chemical or Trade Name  
Oxazole, 5-phenyl-2-[3,6,8-tris(4-methylphenyl)-1-pyrenyl]- (CA INDEX)

NAME)



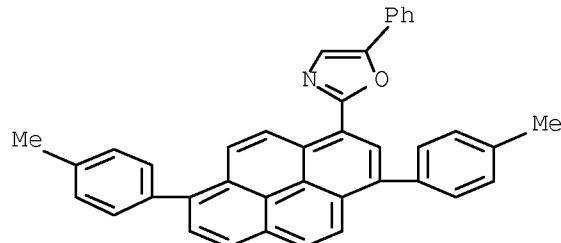
CAS Registry Number  
908011-58-5 CAPIUS

Chemical or Trade Name  
Oxazole, 5-phenyl-2-[3,6,8-tris(4-methyl-1-naphthalenyl)-1-pyrenyl]- (CA INDEX NAME)



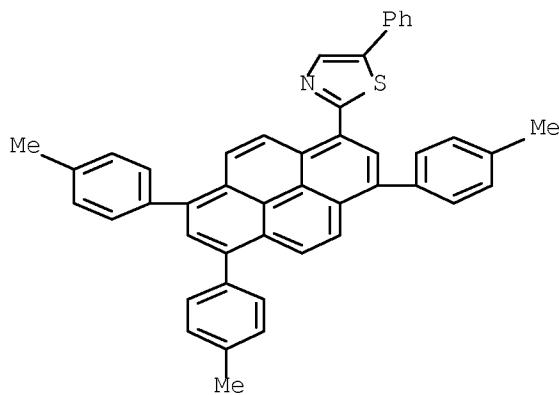
CAS Registry Number  
908011-61-0 CAPIUS

Chemical or Trade Name  
Oxazole, 2-[3,8-bis(4-methylphenyl)-1-pyrenyl]-5-phenyl- (CA INDEX NAME)



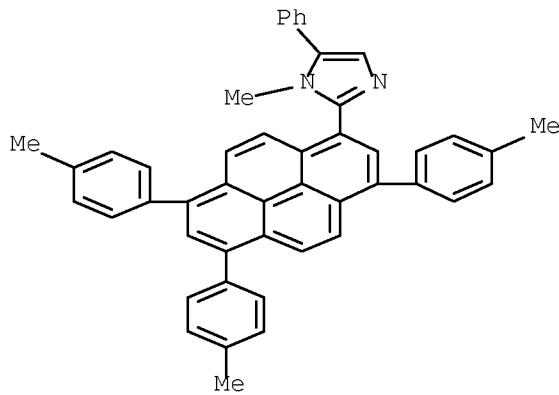
CAS Registry Number  
908011-62-1 CAPIUS

Chemical or Trade Name  
Thiazole, 5-phenyl-2-[3,6,8-tris(4-methylphenyl)-1-pyrenyl]- (CA INDEX NAME)



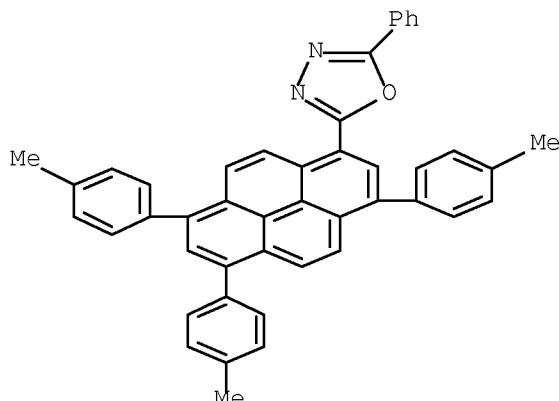
CAS Registry Number  
908011-63-2 CAPLUS

Chemical or Trade Name  
1H-Imidazole, 1-methyl-5-phenyl-2-[3,6,8-tris(4-methylphenyl)-1-pyrenyl]-  
(CA INDEX NAME)



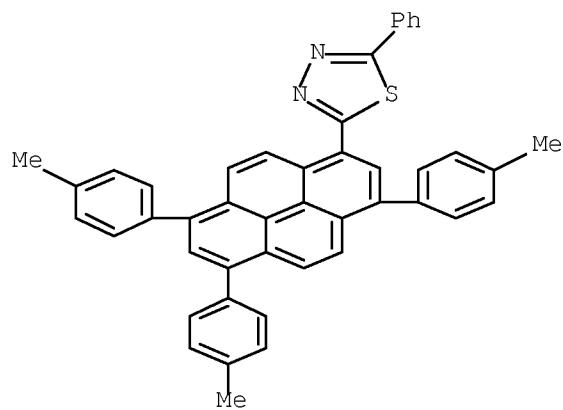
CAS Registry Number  
908011-64-3 CAPLUS

Chemical or Trade Name  
1,3,4-Oxadiazole, 2-phenyl-5-(3,6,8-tris(4-methylphenyl)-1-pyrenyl)-  
(CA INDEX NAME)



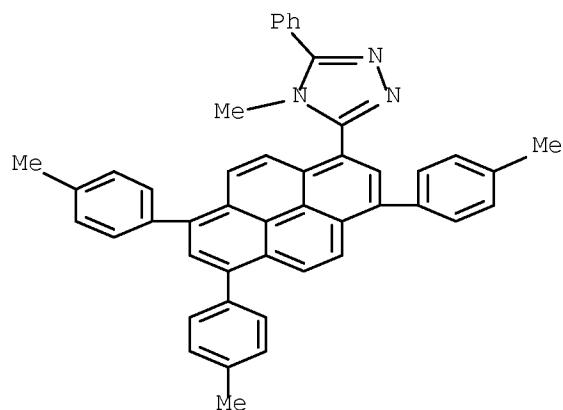
CAS Registry Number  
908011-65-4 CAPIUS

Chemical or Trade Name  
1,3,4-Thiadiazole, 2-phenyl-5-[3,6,8-tris(4-methylphenyl)-1-pyrenyl]- (CA  
INDEX NAME)



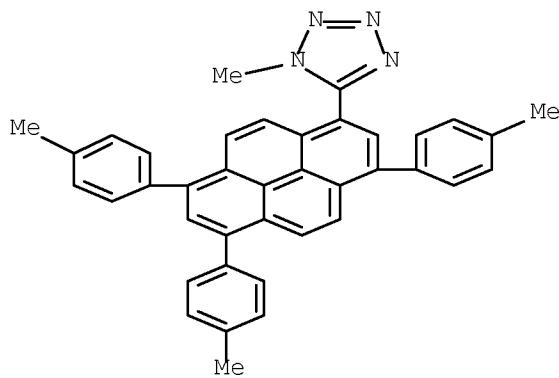
CAS Registry Number  
908011-66-5 CAPIUS

Chemical or Trade Name  
4H-1,2,4-Triazole, 4-methyl-3-phenyl-5-[3,6,8-tris(4-methylphenyl)-1-pyrenyl]- (CA INDEX NAME)



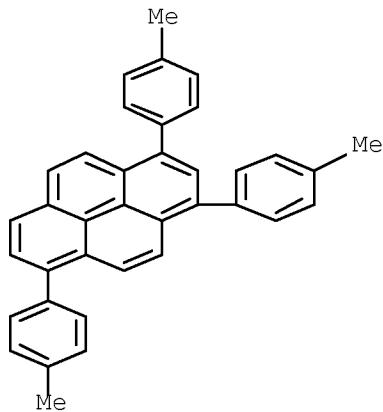
CAS Registry Number  
930088-30-5 CAPIUS

Chemical or Trade Name  
1H-Tetrazole, 1-methyl-5-[3,6,8-tris(4-methylphenyl)-1-pyrenyl]- (CA  
INDEX NAME)



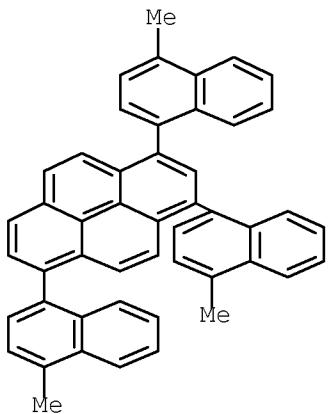
CAS Registry Number  
908011-84-7 CAPLUS

Chemical or Trade Name  
Pyrene, 1,3,6-tris(4-methylphenyl)- (CA INDEX NAME)



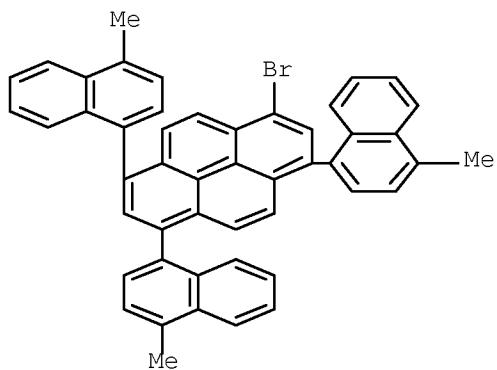
CAS Registry Number  
908011-85-8 CAPLUS

Chemical or Trade Name  
Pyrene, 1,3,6-tris(4-methyl-1-naphthalenyl)- (CA INDEX NAME)



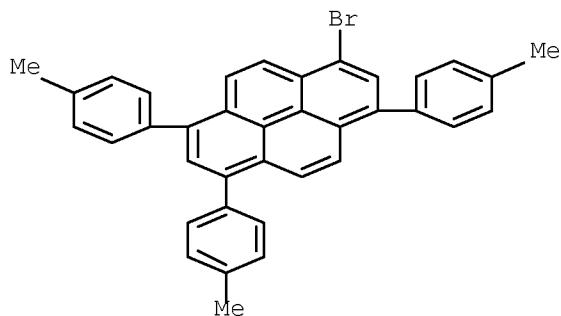
CAS Registry Number  
908011-86-9 CAPLUS

Chemical or Trade Name  
Pyrene, 1-bromo-3,6,8-tris(4-methyl-1-naphthalenyl)- (CA INDEX NAME)



CAS Registry Number  
930088-31-6 CAPLUS

Chemical or Trade Name  
Pyrene, 1-bromo-3,6,8-tris(4-methylphenyl)- (CA INDEX NAME)



Accession Number

200733414 CAPLUS [Full-text](#)

Document Number

146:121699

Title

Process for preparation of pyrene derivatives for use in organic electroluminescence devices

Author/Inventor

Ito, Mitsunori; Kubota, Mineyuki

Patent Assignee/Corporate Source

Idemitsu Kosan Co., Ltd., Japan

Source

PCT Int. Appl., 62pp. CODEN: PIXXD2

Document Type

Patent

Language

Japanese

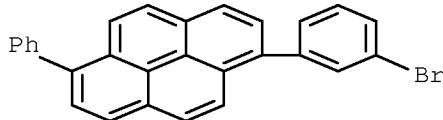
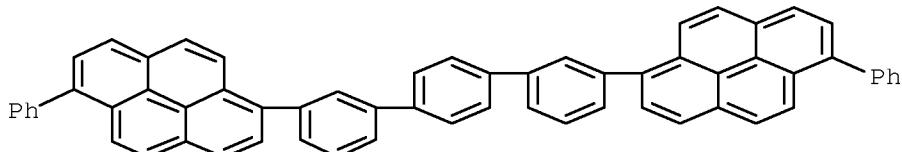
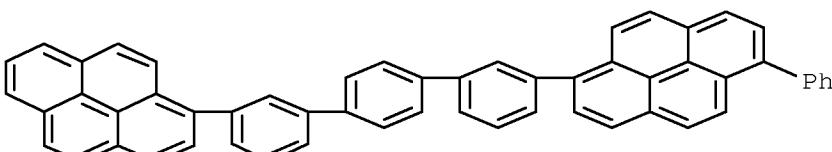
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|----------------|------|----------|------------------|----------|
| WO 2007004364  | A1   | 20070111 | WO 2006-JP310194 | 20060523 |
| JP 2007015961  | A    | 20070125 | JP 2005-197765   | 20050706 |
| EP 1905754     | A1   | 20080402 | EP 2006-746728   | 20060523 |
| US 20080124571 | A1   | 20080529 | US 2007-926813   | 20071029 |
| US 7585574     | B2   | 20090908 |                  |          |
| CN 101213161   | A    | 20080702 | CN 2006-80024361 | 20080103 |
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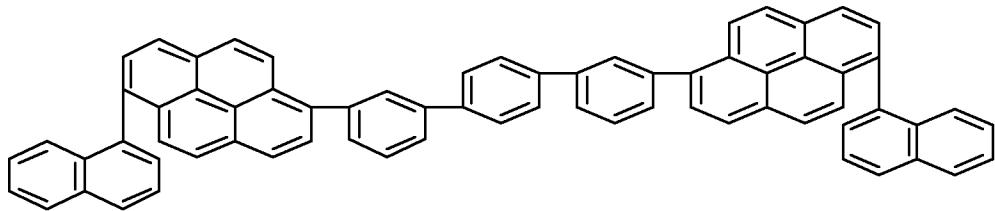
Abstract

This invention pertains to a method for producing pyrene derivs. via coupling reaction, for the use in organic electroluminescence devices comprising a neg. electrode and a pos. electrode and, interposed there between, one or two or more organic thin film layers including at least a light emitting layer, wherein at least one of the organic thin film layers contains the pyrene derivative alone or as a component of mixture. For example, the compound I was prepared in a three-step synthesis starting from pyrene-1-boronic acid and 3-bromo-1-iodobenzene in good yield. Thus, there is provided an organic electroluminescence device of high luminous efficiency capable of prolonged blue light emission.

Hit Structure

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918654-67-8 CAPLUSChemical or Trade Name  
Pyrene, 1,1'-(1,1':4',1''-terphenyl)-3,3''-diylbis[6-phenyl- (CA INDEX NAME)CAS Registry Number  
918654-68-9 CAPLUSChemical or Trade Name  
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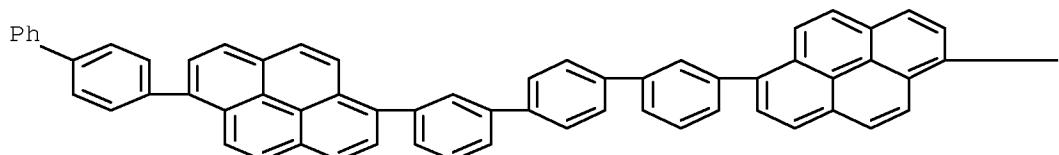
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(CA INDEX NAME)



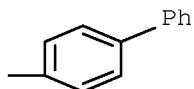
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(CA INDEX NAME)

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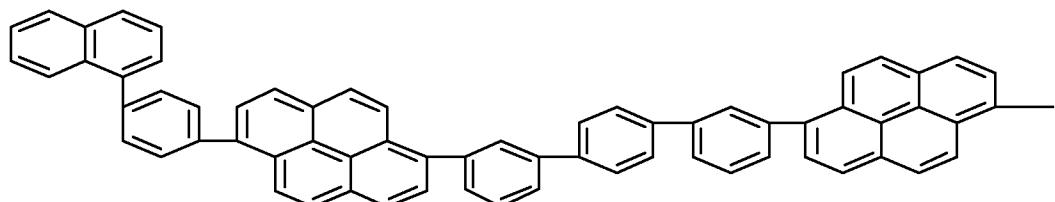
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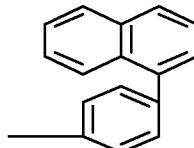
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(CA INDEX NAME)

PAGE 1-A



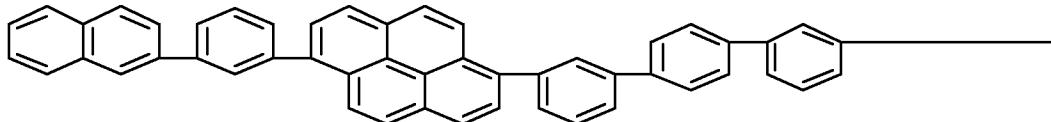
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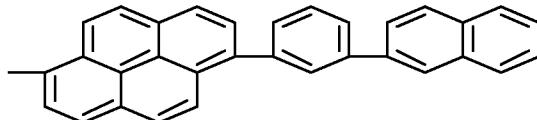
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Chemical or Trade Name  
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PAGE 1-A

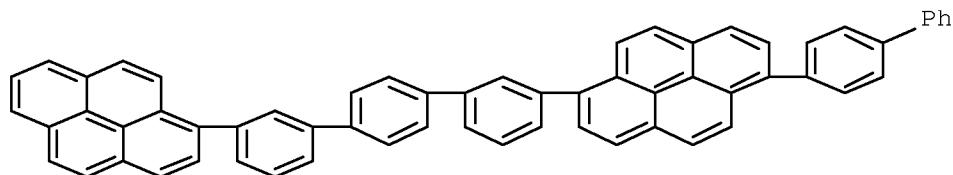


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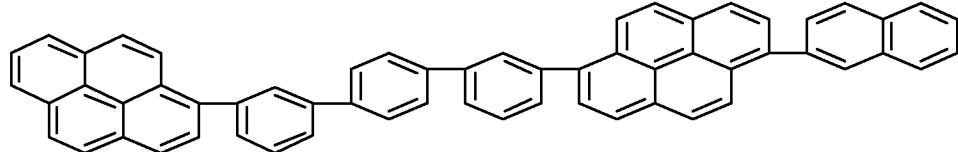
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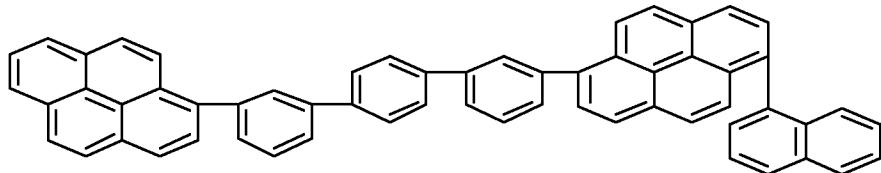
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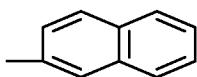


CAS Registry Number  
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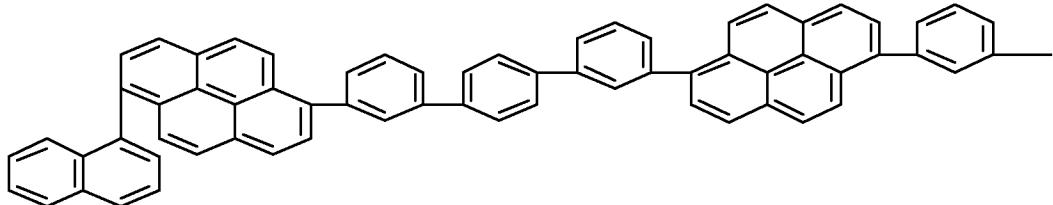
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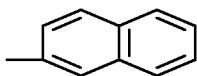
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PAGE 1-A

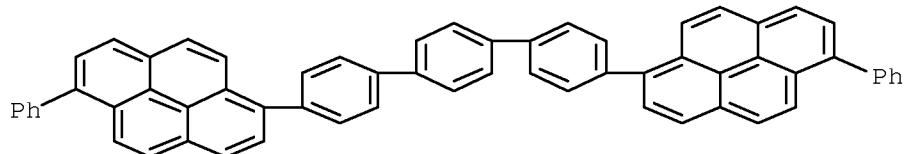


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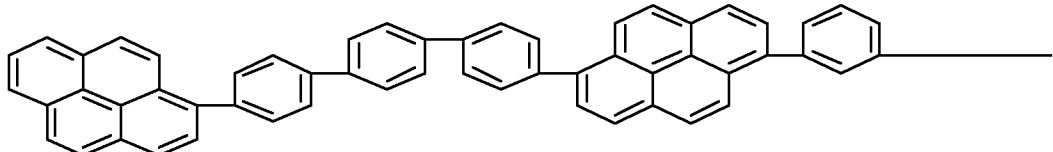
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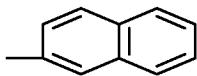


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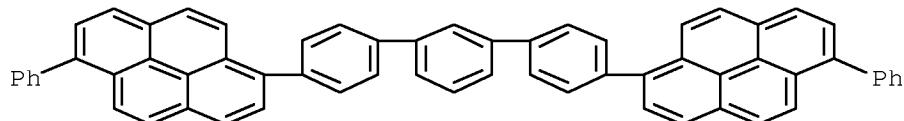
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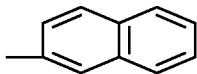
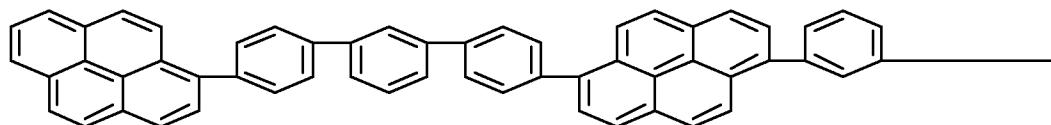
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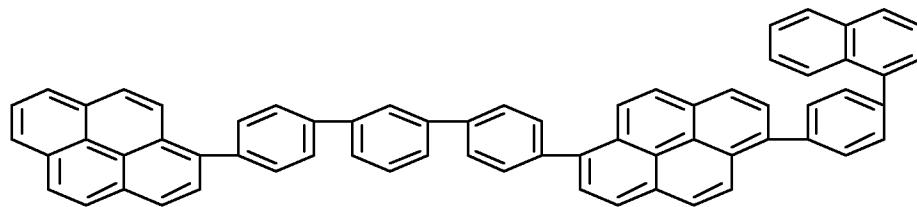
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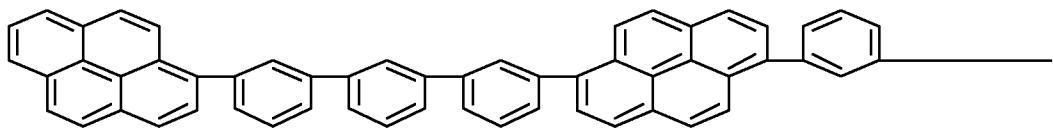
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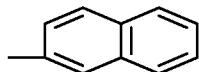
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Chemical or Trade Name  
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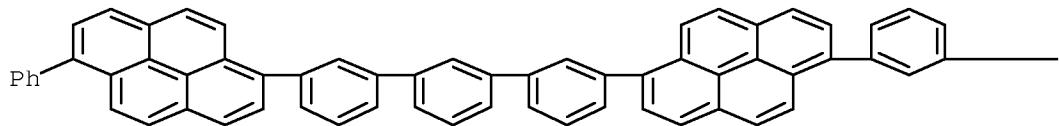
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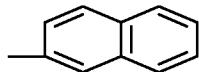
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Chemical or Trade Name  
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PAGE 1-A

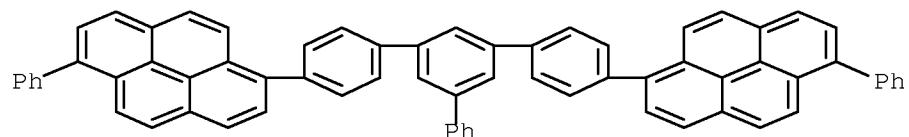


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CAS Registry Number  
918654-92-9 CAPIUS

Chemical or Trade Name  
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OS.CITING REF COUNT: 1 THERE ARE 1 CAPIUS RECORDS THAT CITE THIS RECORD  
(1 CITINGS)

L5 ANSWER 10 OF 59 CAPIUS COPYRIGHT 2011 ACS on STN

Accession Number  
20061309504 CAPIUS Full-text

Document Number  
14673195

Title  
Multicyclic materials for organic electronic devices and devices using them

Author/Inventor  
Heil, Holger; Buesing, Anne; Stoessel, Philipp; Vestweber, Horst

Patent Assignee/Corporate Source  
Merck Patent G.m.b.H., Germany

Source  
PCT Int. Appl., 61pp, CODEN: PIXXD2

Document Type  
Patent

Language  
German

Patent Information

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
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|-----------------|----|----------|----------------------|----------|
| WO 2006131192   | A1 | 20061214 | WO 2006-EP4609       | 20060516 |
| DE 102005026651 | A1 | 20061214 | DE 2005-102005026651 | 20050609 |
| EP 1888707      | A1 | 20080220 | EP 2006-753643       | 20060516 |
| JP 2008545762   | T  | 20081218 | JP 2008-515076       | 20060516 |
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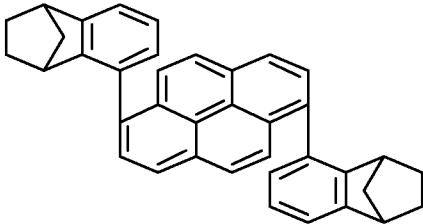
#### Abstract

Materials are described which comprise condensed aromatic systems including  $\geq 1$  C $\geq 14$  (hetero)aryl groups. Polymers, oligomers, and dendrimers are described which have repeating units based on the compds. Electronic devices (e.g., organic and polymeric **electroluminescent** devices, organic FETs, organic integrated circuits, organic thin-film transistors, organic integrated circuits, organic solar cells, organic field quenching devices, organic **light-emitting** transistors, **light-emitting** electrochem. cells, organic photoreceptors, and organic laser diodes) using the materials, polymers, oligomers, dendrimers, or mixts. containing them are also described.

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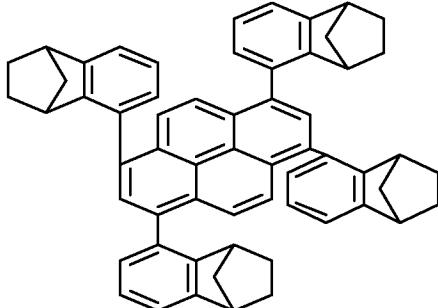
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916669-23-3 CAPIUS

Chemical or Trade Name  
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CAS Registry Number  
916669-30-2 CAPIUS

Chemical or Trade Name  
Pyrene, 1,3,6,8-tetrakis(1,2,3,4-tetrahydro-1,4-methanonaphthalen-5-yl)- (CA INDEX NAME)



OS.CITING REF COUNT: 1 THERE ARE 1 CAPIUS RECORDS THAT CITE THIS RECORD  
(2 CITINGS)

L5 ANSWER 11 OF 59 CAPIUS COPYRIGHT 2011 ACS on STN

Accession Number  
20061157695 CAPIUS Full-text

Document Number  
145:471240

Title  
Preparation of aromatic amine derivatives and organic **electroluminescent** device containing them

Author/Inventor  
Hosokawa, Chisio; Kawamura, Masahiro; Funahashi, Masakazu

Patent Assignee/Corporate Source  
Idemitsu Kosan Co., Ltd., Japan

Source  
PCT Int. Appl., 43pp. CODEN: PIXXD2

Document Type  
Patent

Language  
Japanese

Patent Information

| PATENT NO.     | KIND | DATE     | APPLICATION NO.  | DATE     |
|----------------|------|----------|------------------|----------|
| WO 2006114949  | A1   | 20061102 | WO 2006-JP305007 | 20060314 |
| JP 2006298793  | A    | 20061102 | JP 2005-119880   | 20050418 |
| US 20060251925 | A1   | 20061109 | US 2006-378332   | 20060320 |
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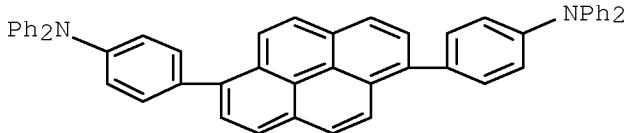
## Abstract

The title compds. I [A1, A2, R1 = H, (un)substituted alkyl, (un)substituted aryl, etc.; m, n = 0 - 50; when m or n ≥ 2, substituents A1, A2 may be the same or different and may combine to form (un)saturated rings; x = 1 - 4; when x ≥ 2, the structures within the brackets may be the same or different; q = 0 - 9; when q ≥ 2, substituents R1 may be the same or different; X1 = (un)substituted arylene] are prepared. Thus, the title compound II was prepared from 1,6-dibromopyrene and 4-(diphenylamino)phenylboronic acid in presence of tetrakis(triphenylphosphine)palladium. An organic electroluminescent element containing II showed high light emission luminance and excellent high-temperature storage stability.

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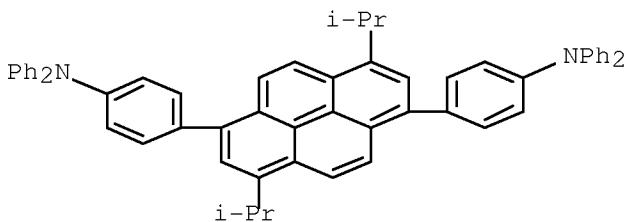
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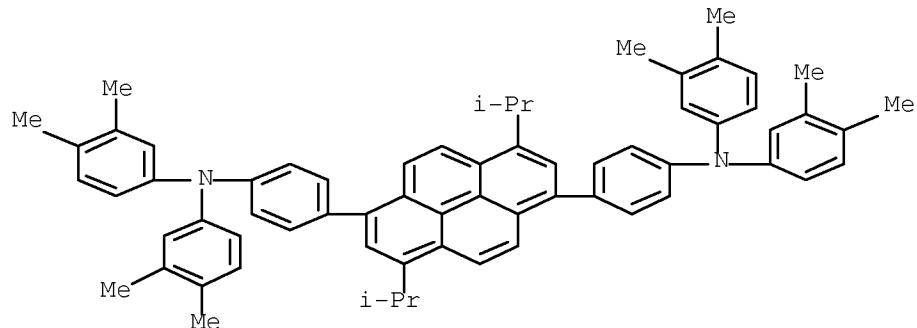
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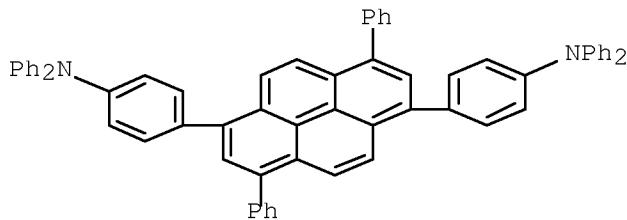
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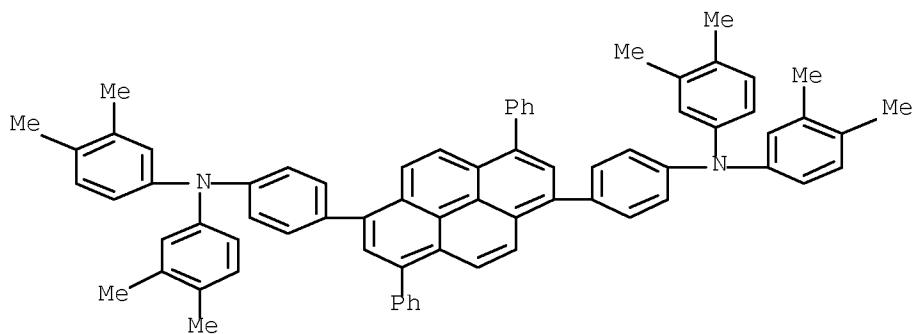
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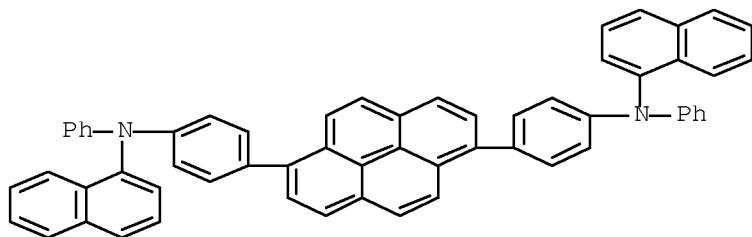
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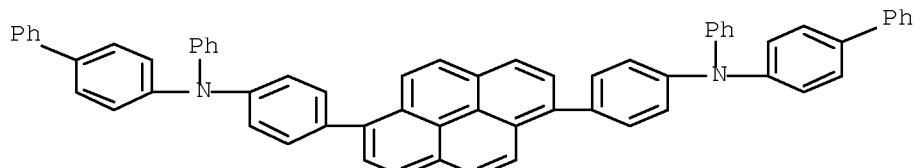
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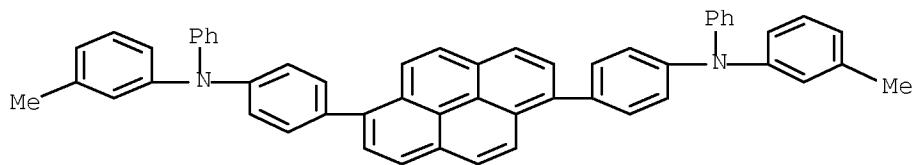
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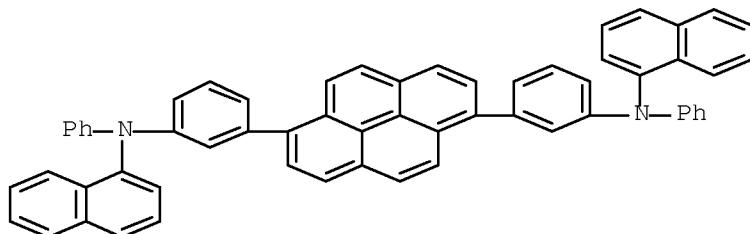
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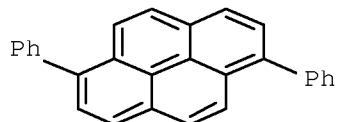
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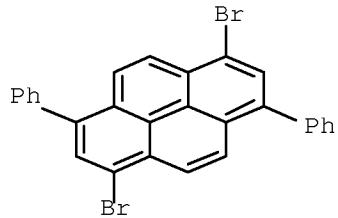
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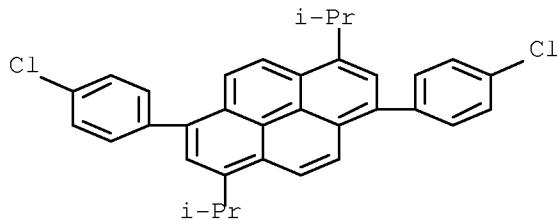
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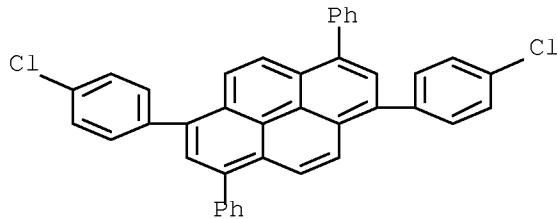
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Chemical or Trade Name  
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CAS Registry Number  
913977-57-8 CAPLUS

Chemical or Trade Name  
Pyrene, 1,6-bis(4-chlorophenyl)-3,8-diphenyl- (CA INDEX NAME)



L5 ANSWER 12 OF 59 CAPLUS COPYRIGHT 2011 ACS on STN

Accession Number  
20061097663 CAPLUS Full-text

Document Number  
145429142

Title  
Hybrid OLED having phosphorescent and fluorescent emitters

Author/Inventor  
Tung, Yeh-Jiun; Weaver, Michael S.; Hack, Michael; Esler, James

Patent Assignee/Corporate Source  
Universal Display Corp., USA

Source  
U.S. Pat. Appl. Publ., 24 pp. CODEN: USXXCO

Document Type  
Patent

Language  
English

Patent Information

| PATENT NO.     | KIND | DATE     | APPLICATION NO. | DATE     |
|----------------|------|----------|-----------------|----------|
| US 20060232194 | A1   | 20061019 | US 2005-105666  | 20050413 |
| WO 2006113106  | A1   | 20061026 | WO 2006-US12158 | 20060330 |

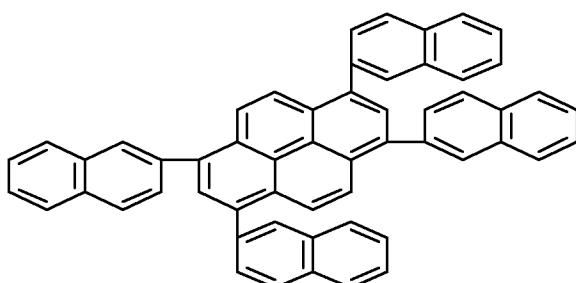
Abstract

An organic light emitting devices having a combined emission from at least two emissive materials, a fluorescent blue emissive material and a phosphorescent emissive material is described. The OLEDs may include three different emissive materials-a red emissive material, a green emissive material and a blue emissive material for white emission.

Hit Structure

CAS Registry Number  
887909-59-3 CAPLUS

Chemical or Trade Name  
Pyrene, 1,3,6,8-tetra-2-naphthalenyl- (CA INDEX NAME)



Accession Number  
20061038072 CAPLUS [Full-text](#)

Document Number  
145:407183

Title  
Arylpyrene compounds and organic light-emitting devices using them

Author/Inventor  
Kwong, Raymond; Nugent, Matthew

Patent Assignee/Corporate Source  
Universal Display Corporation, USA

Source  
U.S. Pat. Appl. Publ., 48 pp. CODEN: USXXCO

Document Type  
Patent

Language  
English

Patent Information

| PATENT NO.     | KIND | DATE     | APPLICATION NO. | DATE     |
|----------------|------|----------|-----------------|----------|
| US 20060222886 | A1   | 20061005 | US 2005-97352   | 20050404 |
| WO 2006107646  | A1   | 20061012 | WO 2006-US11211 | 20060327 |

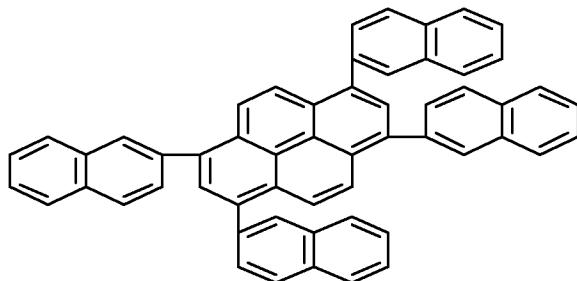
Abstract

Arylpyrene compds. are described which comprise pyrene cores with 2-naphthyl derivative substituents at the 1, 3, 6, and 8 positions, the 2-naphthyl derivs. having H atoms at the positions adjacent to the attachment point (positions 1 and 3) and independently selected substituents or H atoms at other points. Organic light-emitting devices with organic layers including the naphthylpyrene compds. are also described.

Hit Structure

CAS Registry Number  
887909-59-3 CAPLUS

Chemical or Trade Name  
Pyrene, 1,3,6,8-tetra-2-naphthalenyl- (CA INDEX NAME)



Accession Number  
20061037379 CAPLUS [Full-text](#)

Document Number  
145:407804

Title  
The organic electroluminescent elements and displays

Author/Inventor  
Nakayama, Masaya

Patent Assignee/Corporate Source  
Fuji Photo Film Co., Ltd., Japan

Source  
Jpn. Kokai Tokkyo Koho, 31pp. CODEN: JKXXAF

Document Type  
Patent

Language  
Japanese

Patent Information

| PATENT NO.     | KIND | DATE     | APPLICATION NO. | DATE     |
|----------------|------|----------|-----------------|----------|
| JP 2006269670  | A    | 20061005 | JP 2005-84525   | 20050323 |
| US 20070154735 | A1   | 20070705 | US 2006-386675  | 20060323 |

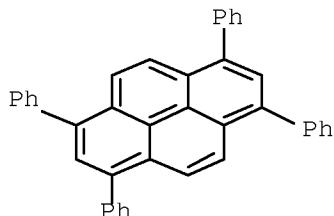
Abstract

The disclosed organic electroluminescent element comprises a support, organic electroluminescent layers, at least one of which contains a 1,3,6,8-tetraphenylpyrene derivative and a triphenylbenzene derivative. The preferred triphenylbenzene derivative is 1,3,5-tris[4-(N-carbazolyl)phenyl]benzene. The electroluminescent element has high emission efficiency, good luminosity, and color purity..

Hit Structure

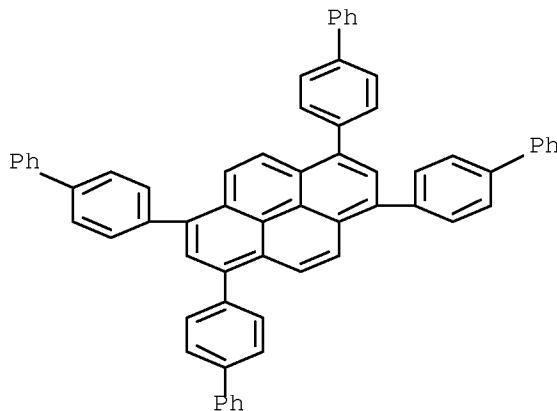
CAS Registry Number  
13638-82-9 CAPLUS

Chemical or Trade Name  
Pyrene, 1,3,6,8-tetraphenyl- (CA INDEX NAME)



CAS Registry Number  
790273-07-3 CAPIUS

Chemical or Trade Name  
Pyrene, 1,3,6,8-tetrakis((1,1'-biphenyl)-4-yl)- (CA INDEX NAME)



L5 ANSWER 15 OF 59 CAPIUS COPYRIGHT 2011 ACS on STN

Accession Number  
20061030333 CAPIUS Full-text

Document Number  
145386064

Title

Organic electroluminescent devices showing high luminescent efficiency and terphenyl derivatives therefor

Author/Inventor

Takagi, Katsuhiko; Kimura, Makoto; Hosokawa, Chishio; Funabashi, Masakazu

Patent Assignee/Corporate Source

Idemitsu Kosan Co., Ltd., Japan

Source

Jpn. Kokai Tokkyo Koho, 22pp. CODEN: JKXXAF

Document Type

Patent

Language

Japanese

Patent Information

| PATENT NO.    | KIND | DATE     | APPLICATION NO. | DATE     |
|---------------|------|----------|-----------------|----------|
| JP 2006265108 | A    | 20061005 | JP 2005-81233   | 20050322 |

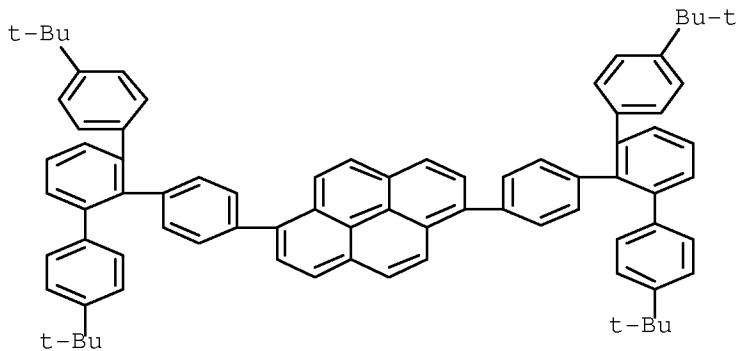
Abstract

Terphenyl derivs. I (X1 = C6-50 aromatic hydrocarbon or C5-50 aromatic heterocycle; R1-R3, A1, A2 = H, C6-50 aromatic hydrocarbyl, C5-50 aromatic heterocycle, etc.; a, b = 1-5; m = 1-4; A1 and/or A2 = C1-6 alkyl, C3-10 cycloalkyl) and organic LED containing the same in one of their constituent organic layers are sep. claimed. Thus, 10 mmol 1,3-dichlorobenzene was reacted with n-BuLi at -78° in THF, 30 mmol 4-tert-butylphenylmagnesium bromide, and then with 30 mmol 2-isopropoxy-4,4,5,5-tetramethyl-1,3,2-dioxaborolane to give a boronic acid derivative, 4 mmol of which was reacted with 9,10-bis(p-bromophenyl)anthracene in the presence of Pd catalyst to give a white product of II in 28% yield. An organic LED containing II showed blue emission with luminance half life ≥20,000 h.

Hit Structure

CAS Registry Number  
910556-12-6 CAPIUS

Chemical or Trade Name  
Pyrene, 1,6-bis[4''-(1,1-dimethylethyl)-6'-(4-(1,1-dimethylethyl)phenyl)[1,1':2',1''-terphenyl]-4-yl]- (9CI) (CA INDEX NAME)



L5 ANSWER 16 OF 59 CAPLUS COPYRIGHT 2011 ACS on STN

Accession Number

2006974950 CAPLUS Full-text

Document Number

145356527

Title

Preparation of aromatic amine derivatives as doping materials for organic electroluminescent devices

Author/Inventor

Funahashi, Masakazu; Kubota, Mineyuki

Patent Assignee/Corporate Source

Idemitsu Kosan Co., Ltd., Japan

Source

PCT Int. Appl., 52pp.; Chemical Indexing Equivalent to 150539448 (JP) CODEN: PIXXD2

Document Type

Patent

Language

Japanese

Patent Information

| PATENT NO.     | KIND | DATE     | APPLICATION NO.  | DATE     |
|----------------|------|----------|------------------|----------|
| WO 2006098080  | A1   | 20060921 | WO 2006-JP300516 | 20060117 |
| JP 4263700     | B2   | 20090513 | JP 2005-73474    | 20050315 |
| JP 2006256979  | A    | 20060928 |                  |          |
| EP 1860096     | A1   | 20071128 | EP 2006-711796   | 20060117 |
| KR 2007110362  | A    | 20071116 | KR 2007-7020953  | 20070913 |
| IN 2007CN04053 | A    | 20071123 | IN 2007-CN4053   | 20070917 |
| CN 101142169   | A    | 20080312 | CN 2006-80008634 | 20070917 |

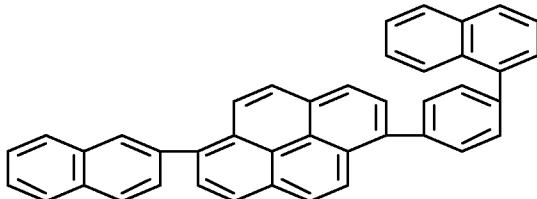
Abstract

The title compds. I [T1 = (A3)c; T2 = (A4)d; T3 = (A1)a; T4 = (A2)b; A1 - A4 = H, (un)substituted alkyl, (un)substituted aryl, (un)substituted aralkyl, etc.; a, b, c, d = 0 - 3; A5 - A12 = (un)substituted alkyl, (un)substituted aryl, (un)substituted aralkyl, etc.; or A5 and A6, A7 and A8, A9 and A10, A11 and A12 may be connected to form a ring; R1 - R10 = H, (un)substituted alkyl, (un)substituted aryl, (un)substituted aralkyl, etc.] are prepared. Thus, the title compound II was prepared from the coupling reaction of 6,12-dibromochrysene with bis(3,4-dimethylphenyl)amine. An organic electroluminescent device containing II showed blue light and luminous efficiency 7.1 cd/A under voltage of 6.5 V.

Hit Structure

CAS Registry Number  
870774-21-3 CAPLUS

Chemical or Trade Name  
Pyrene, 1-(2-naphthalenyl)-6-[4-(1-naphthalenyl)phenyl]- (CA INDEX NAME)



## Title

Material for light-emitting element and light-emitting element

## Author/Inventor

Sugimoto, Kazunori; Murase, Seiichiro; Kitazawa, Daisuke; Nagao, Kazumasa; Ogawa, Takafumi; Tominaga, Tsuyoshi

## Patent Assignee/Corporate Source

Toray Industries, Inc., Japan

## Source

PCT Int. Appl., 77pp. CODEN: PIXXD2

## Document Type

Patent

## Language

Japanese

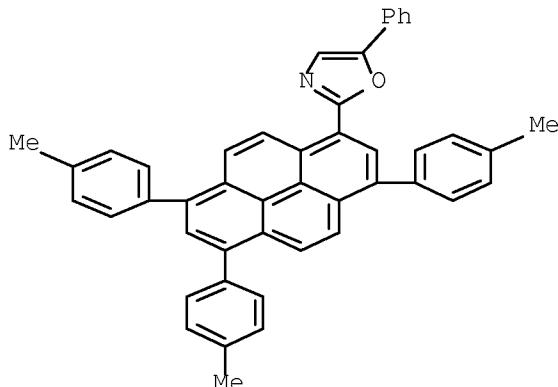
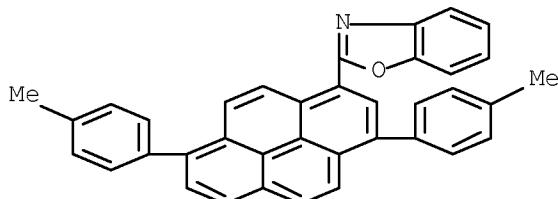
## Patent Information

| PATENT NO.     | KIND | DATE     | APPLICATION NO.  | DATE     |
|----------------|------|----------|------------------|----------|
| WO 2006090772  | A1   | 20060831 | WO 2006-JP303254 | 20060223 |
| JP 2006265515  | A    | 20061005 | JP 2005-180464   | 20050621 |
| EP 1852486     | A1   | 20071107 | EP 2006-714394   | 20060223 |
| KR 2007114723  | A    | 20071204 | KR 2007-7019375  | 20070824 |
| US 20090066245 | A1   | 20090312 | US 2007-817143   | 20070824 |
| US 7901794     | B2   | 20110308 |                  |          |
| CN 101128561   | A    | 20080220 | CN 2006-80006231 | 20070827 |

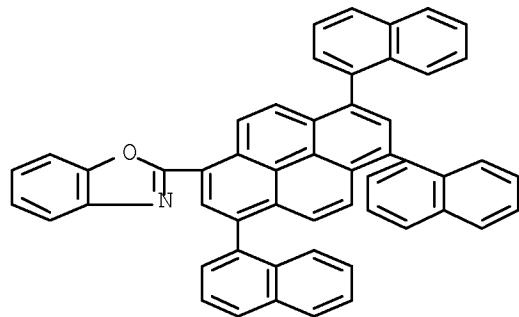
## Abstract

The invention relates to a material for a light-emitting device comprising a pyrene compound represented by a general formula I: where R1 to R10 independently represent a specific functional group, provided that at least one of R1 to R10 represents a substituent represented by a general formula II: where R11 to R14 independently represent a specific functional group, provided that any one of R11 to R14 is used for the single bonding to the pyrene backbone; X1 represents any one of the groups of -O-, -S-, -N(R15); Y1 to Y4 are independently selected from a nitrogen atom and a carbon atom, provided that at least one of Y1 to Y4 is a nitrogen atom and at least one of Y1 to Y4 is a carbon atom and, when it is a nitrogen atom, the nitrogen atom has no substituent attached, R15 represents a specific functional group. By using this material, a light-emitting device having higher light-emitting efficiency and excellent durability can be provided.

## Hit Structure

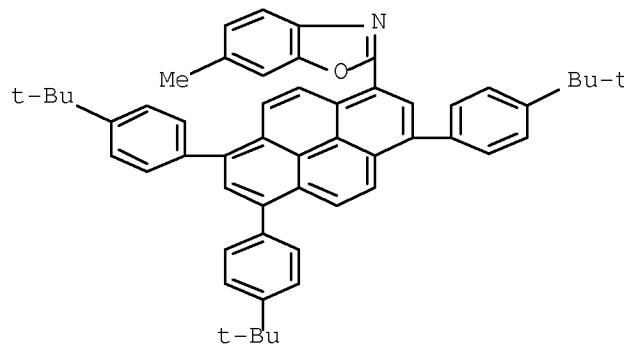
CAS Registry Number  
908011-57-4 CAPLUSChemical or Trade Name  
Oxazole, 5-phenyl-2-[3,6,8-tris(4-methylphenyl)-1-pyrenyl]- (CA INDEX NAME)CAS Registry Number  
908011-69-8 CAPLUSChemical or Trade Name  
Benzoxazole, 2-[3,8-bis(4-methylphenyl)-1-pyrenyl]- (CA INDEX NAME)CAS Registry Number  
908011-70-1 CAPLUS

Chemical or Trade Name  
Benzoxazole, 2-(3,6,8-tri-1-naphthalenyl-1-pyrenyl)- (CA INDEX NAME)



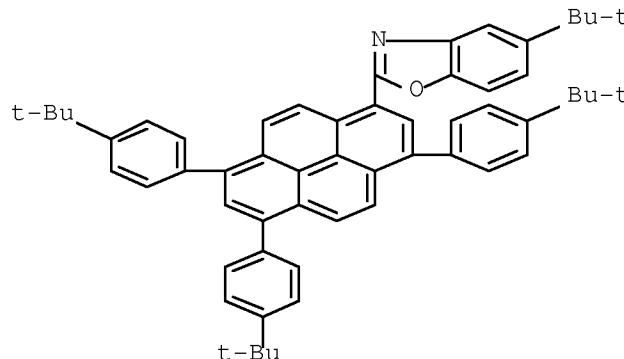
CAS Registry Number  
908011-74-5 CAPIUS

Chemical or Trade Name  
Benzoxazole, 6-methyl-2-[3,6,8-tris[4-(1,1-dimethylethyl)phenyl]-1-pyrenyl]- (CA INDEX NAME)



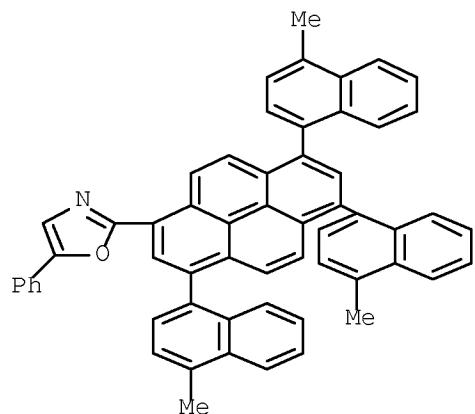
CAS Registry Number  
908011-75-6 CAPIUS

Chemical or Trade Name  
Benzoxazole, 5-(1,1-dimethylethyl)-2-[3,6,8-tris[4-(1,1-dimethylethyl)phenyl]-1-pyrenyl]- (CA INDEX NAME)



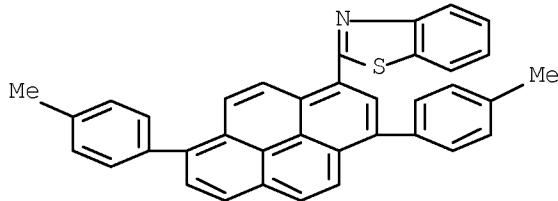
CAS Registry Number  
908011-58-5 CAPIUS

Chemical or Trade Name  
Oxazole, 5-phenyl-2-[3,6,8-tris(4-methyl-1-naphthalenyl)-1-pyrenyl]- (CA INDEX NAME)



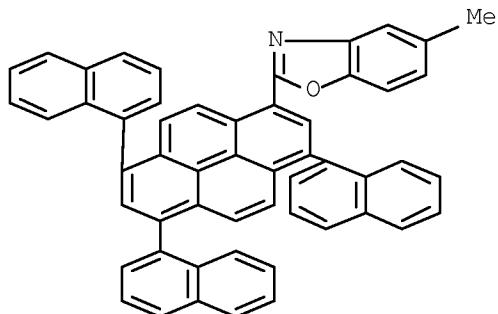
CAS Registry Number  
908011-68-7 CAPIUS

Chemical or Trade Name  
Benzothiazole, 2-[3,8-bis(4-methylphenyl)-1-pyrenyl]- (CA INDEX NAME)



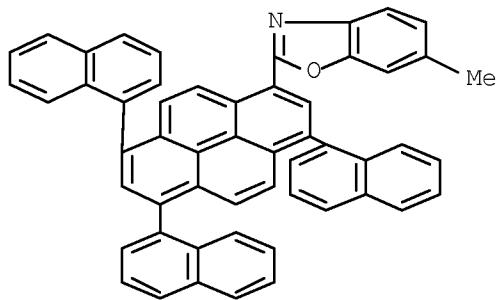
CAS Registry Number  
908011-71-2 CAPIUS

Chemical or Trade Name  
Benzoxazole, 5-methyl-2-(3,6,8-tri-1-naphthalenyl-1-pyrenyl)- (CA INDEX NAME)



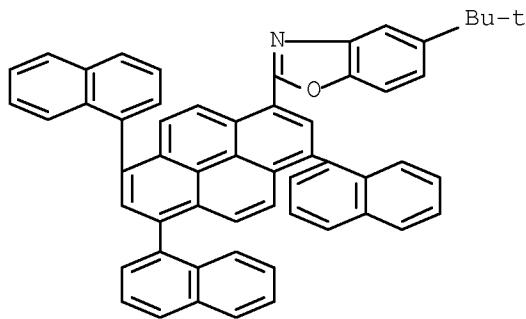
CAS Registry Number  
908011-72-3 CAPIUS

Chemical or Trade Name  
Benzoxazole, 6-methyl-2-(3,6,8-tri-1-naphthalenyl-1-pyrenyl)- (CA INDEX NAME)



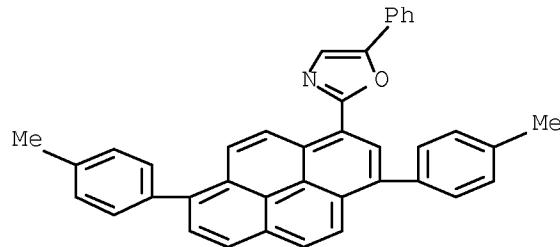
CAS Registry Number  
908011-73-4 CAPIUS

Chemical or Trade Name  
Benzoxazole, 5-(1,1-dimethylethyl)-2-(3,6,8-tri-1-naphthalenyl-1-pyrenyl)-  
(CA INDEX NAME)



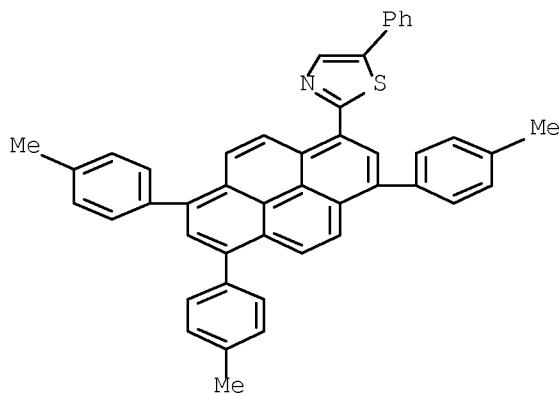
CAS Registry Number  
908011-61-0 CAPIUS

Chemical or Trade Name  
Oxazole, 2-[3,8-bis(4-methylphenyl)-1-pyrenyl]-5-phenyl- (CA INDEX NAME)



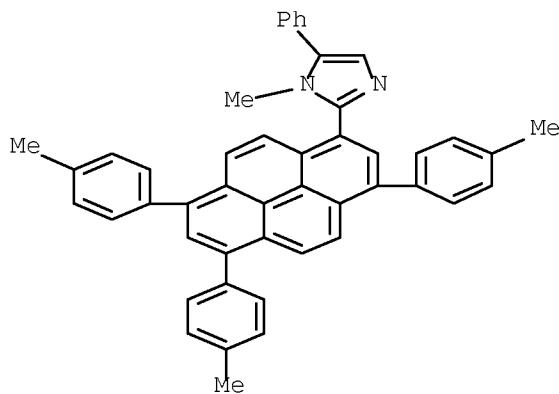
CAS Registry Number  
908011-62-1 CAPIUS

Chemical or Trade Name  
Thiazole, 5-phenyl-2-[3,6,8-tris(4-methylphenyl)-1-pyrenyl]- (CA INDEX  
NAME)



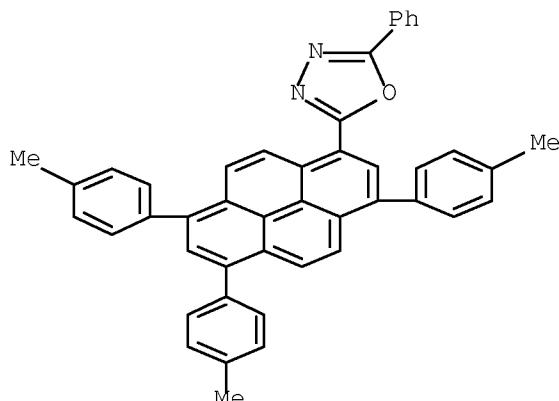
CAS Registry Number  
908011-63-2 CAPLUS

Chemical or Trade Name  
1H-Imidazole, 1-methyl-5-phenyl-2-[3,6,8-tris(4-methylphenyl)-1-pyrenyl]-  
(CA INDEX NAME)



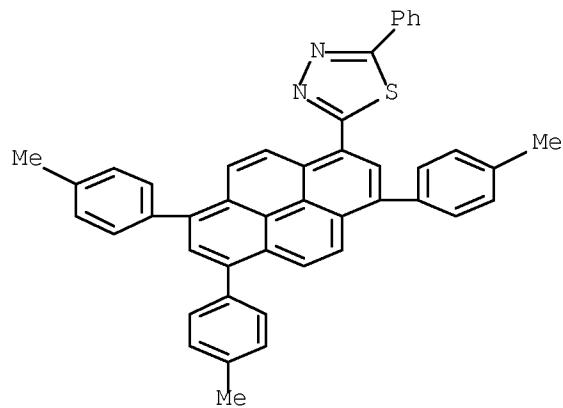
CAS Registry Number  
908011-64-3 CAPLUS

Chemical or Trade Name  
1,3,4-Oxadiazole, 2-phenyl-5-(3,6,8-tris(4-methylphenyl)-1-pyrenyl)-  
(CA INDEX NAME)



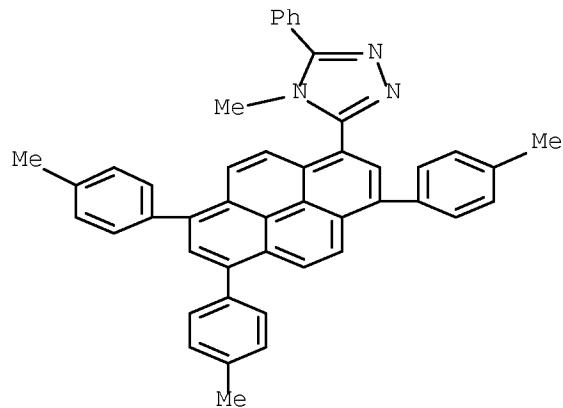
CAS Registry Number  
908011-65-4 CAPIUS

Chemical or Trade Name  
1,3,4-Thiadiazole, 2-phenyl-5-[3,6,8-tris(4-methylphenyl)-1-pyrenyl]- (CA INDEX NAME)



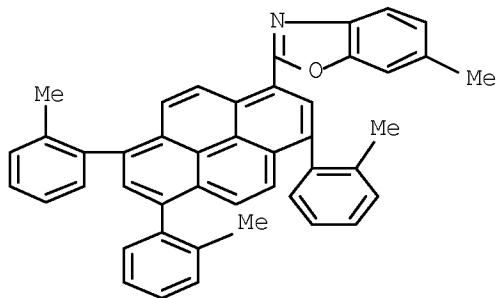
CAS Registry Number  
908011-66-5 CAPIUS

Chemical or Trade Name  
4H-1,2,4-Triazole, 4-methyl-3-phenyl-5-[3,6,8-tris(4-methylphenyl)-1-pyrenyl]- (CA INDEX NAME)



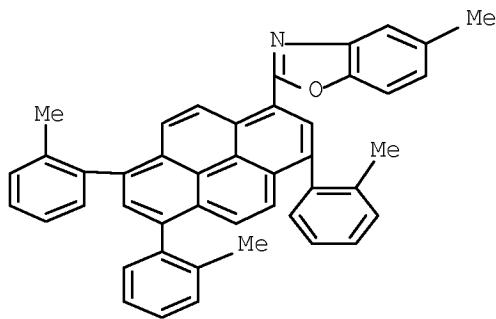
CAS Registry Number  
908011-76-7 CAPIUS

Chemical or Trade Name  
Benzoxazole, 6-methyl-2-[3,6,8-tris(2-methylphenyl)-1-pyrenyl]- (CA INDEX NAME)



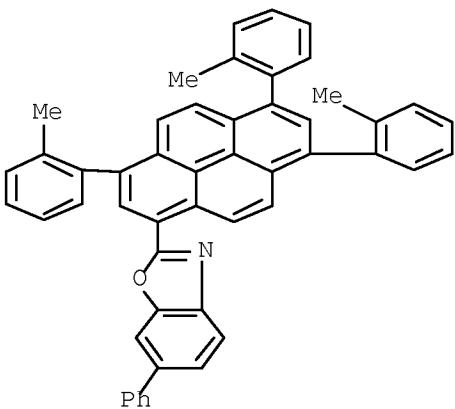
CAS Registry Number  
908011-77-8 CAPLUS

Chemical or Trade Name  
Benzoxazole, 5-methyl-2-[3,6,8-tris(2-methylphenyl)-1-pyrenyl]- (CA INDEX  
NAME)



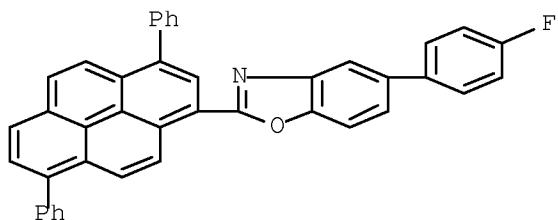
CAS Registry Number  
908011-78-9 CAPLUS

Chemical or Trade Name  
Benzoxazole, 6-phenyl-2-[3,6,8-tris(2-methylphenyl)-1-pyrenyl]- (CA INDEX  
NAME)



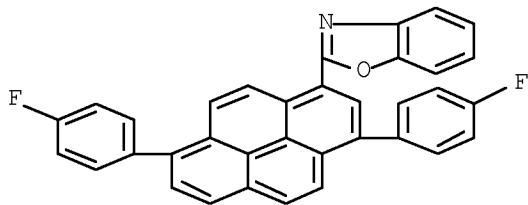
CAS Registry Number  
908011-79-0 CAPLUS

Chemical or Trade Name  
Benzoxazole, 2-(3,8-diphenyl-1-pyrenyl)-5-(4-fluorophenyl)- (CA INDEX  
NAME)



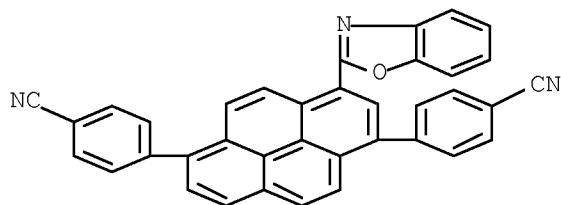
CAS Registry Number  
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Chemical or Trade Name  
Benzoxazole, 2-(3,8-bis(4-fluorophenyl)-1-pyrenyl)- (CA INDEX NAME)



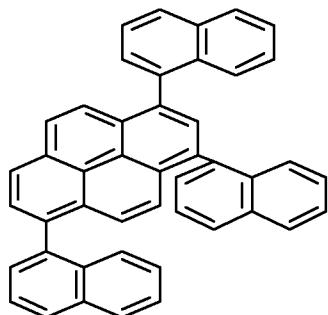
CAS Registry Number  
908011-83-6 CAPIUS

Chemical or Trade Name  
Benzonitrile, 4,4'-(3-(2-benzoxazolyl)-1,6-pyrenediyl)bis- (9CI) (CA INDEX NAME)



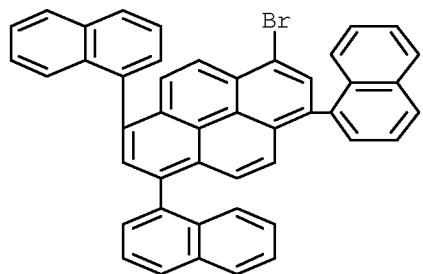
CAS Registry Number  
908011-90-5 CAPIUS

Chemical or Trade Name  
Pyrrene, 1,3,6-tri-1-naphthalenyl- (CA INDEX NAME)



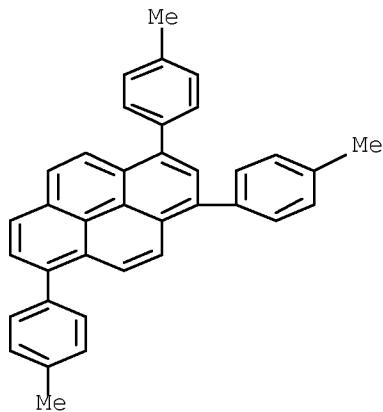
CAS Registry Number  
908011-91-6 CAPIUS

Chemical or Trade Name  
Pyrene, 1-bromo-3,6,8-tri-1-naphthalenyl- (CA INDEX NAME)



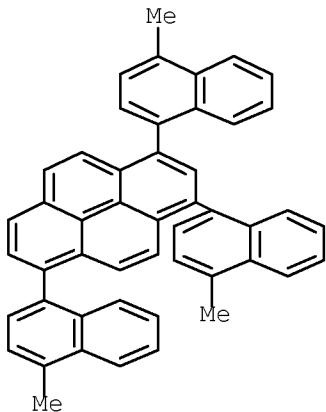
CAS Registry Number  
908011-84-7 CAPLUS

Chemical or Trade Name  
Pyrene, 1,3,6-tris(4-methylphenyl)- (CA INDEX NAME)



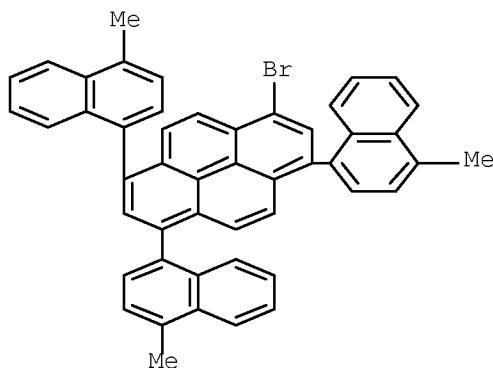
CAS Registry Number  
908011-85-8 CAPLUS

Chemical or Trade Name  
Pyrene, 1,3,6-tris(4-methyl-1-naphthalenyl)- (CA INDEX NAME)



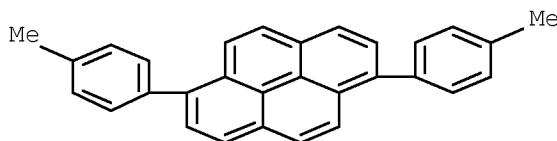
CAS Registry Number  
908011-86-9 CAPLUS

Chemical or Trade Name  
Pyrene, 1-bromo-3,6,8-tris(4-methyl-1-naphthalenyl)- (CA INDEX NAME)



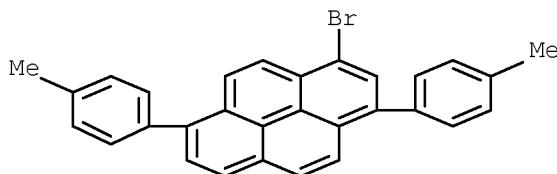
CAS Registry Number  
908011-87-0 CAPIUS

Chemical or Trade Name  
Pyrene, 1,6-bis(4-methylphenyl)- (CA INDEX NAME)



CAS Registry Number  
908011-88-1 CAPIUS

Chemical or Trade Name  
Pyrene, 3-bromo-1,6-bis(4-methylphenyl)- (CA INDEX NAME)



OS.CITING REF COUNT: 3 THERE ARE 3 CAPIUS RECORDS THAT CITE THIS RECORD  
(7 CITINGS)

L5 ANSWER 18 OF 59 CAPIUS COPYRIGHT 2011 ACS on STN

Accession Number  
2006566609 CAPIUS Full-text

Document Number  
145:37063

Title  
Organic electroluminescent device

Author/Inventor  
Kawamura, Hisayuki; Kubota, Mineyuki

Patent Assignee/Corporate Source  
Idemitsu Kosan Co., Ltd., Japan

Source  
PCT Int. Appl., 70 pp. CODEN: PIXD2

Document Type  
Patent

Language  
Japanese

Patent Information

| PATENT NO.     | KIND | DATE     | APPLICATION NO. | DATE     |
|----------------|------|----------|-----------------|----------|
| WO 2006062078  | A1   | 20060615 | WO 2005-JP22336 | 20051206 |
| US 20070134511 | A1   | 20070614 | US 2005-296400  | 20051208 |

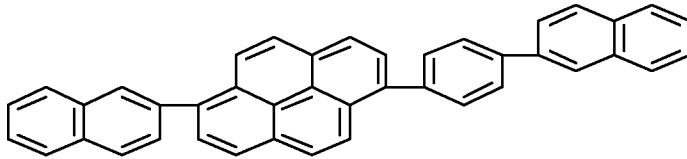
Abstract

Disclosed is an organic electroluminescent device comprising at least a pair of electrodes and a light-emitting layer interposed between them. This organic electroluminescent device is characterized in that the light-emitting layer contains a derivative which includes an asym. substituted anthracene as a partial structure and an amine derivative represented by the formula I, where Ar1-Ar4 resp. represent a substituted or unsubstituted aromatic ring having 6-50 nuclear carbon atoms; R1 and R2 represent substituents which may be the same as or different from each other, or they may combine together to form a saturated or unsatd. ring; and p represents an integer of 1-6.

#### Hit Structure

CAS Registry Number  
888705-94-0 CAPLUS

Chemical or Trade Name  
Pyrene, 1-(2-naphthalenyl)-6-[4-(2-naphthalenyl)phenyl]- (CA INDEX NAME)



OS.CITING REF COUNT: 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD  
(5 CITINGS)

L5 ANSWER 19 OF 59 CAPLUS COPYRIGHT 2011 ACS on STN

Accession Number  
2006538865 CAPLUS [Full-text](#)

Document Number  
145:37410

Title

Organic electroluminescent device

Author/Inventor

Kawamura, Hisayuki; Kubota, Mineyuki; Funahashi, Masakazu

Patent Assignee/Corporate Source

Idemitsu Kosan Co., Ltd., Japan

Source

PCT Int. Appl., 67 pp. CODEN: PIXXD2

Document Type

Patent

Language

Japanese

Patent Information

| PATENT NO.    | KIND | DATE     | APPLICATION NO.  | DATE     |
|---------------|------|----------|------------------|----------|
| WO 2006059512 | A1   | 20060608 | WO 2005-JP21469  | 20051122 |
| JP 4653469    | B2   | 20110316 | JP 2004-348675   | 20041201 |
| JP 2006156888 | A    | 20060615 |                  |          |
| CN 101069299  | A    | 20071107 | CN 2005-80041191 | 20051122 |
| CN 100565964  | C    | 20091202 |                  |          |
| KR 2007091280 | A    | 20070910 | KR 2007-7012284  | 20070531 |

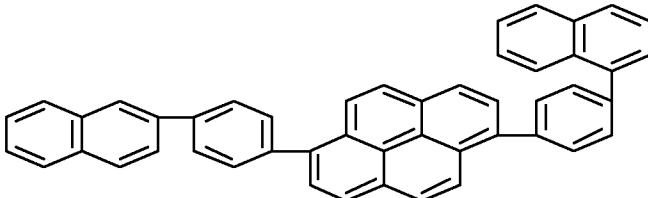
Abstract

Disclosed is an organic electroluminescent device comprising at least an anode, a cathode and an organic light-emitting layer interposed between the electrodes, wherein the organic light-emitting layer contains one or more host materials, a hole-trapping dopant and an electron-trapping dopant. By having the hole-trapping dopant and the electron-trapping dopant coexist in the organic light-emitting layer, the organic electroluminescent device can have a longer life.

Hit Structure

CAS Registry Number  
870774-17-7 CAPLUS

Chemical or Trade Name  
Pyrene, 1-[4-(1-naphthalenyl)phenyl]-6-[4-(2-naphthalenyl)phenyl]- (CA INDEX NAME)



OS.CITING REF COUNT: 4 THERE ARE 4 CAPLUS RECORDS THAT CITE THIS RECORD  
(5 CITINGS)

L5 ANSWER 20 OF 59 CAPLUS COPYRIGHT 2011 ACS on STN

Accession Number  
2006510707 CAPLUS [Full-text](#)

Document Number  
145:17894

Title

Pyrene compound and light emitting transistor device utilizing the same for electroluminescent display

Author/Inventor

Oyamada, Takahito; Uchiuzou, Hiroyuki; Adachi, Chihaya; Akiyama, Seiji; Takahashi, Takayoshi

Patent Assignee/Corporate Source

Kyoto University, Japan; Nippon Telegraph and Telephone Corporation; Pioneer Corporation; Hitachi, Ltd.; Mitsubishi Chemical Corporation; Rohm Co., Ltd.

Source

PCT Int. Appl., 47 pp. CODEN: PIXXD2

Document Type

Patent

Language  
Japanese  
Patent Information

| PATENT NO.     | KIND | DATE     | APPLICATION NO.  | DATE     |
|----------------|------|----------|------------------|----------|
| WO 2006057326  | A1   | 20060601 | WO 2005-JP21648  | 20051125 |
| JP 2006176491  | A    | 20060706 | JP 2005-257934   | 20050906 |
| EP 1816114     | A1   | 20070808 | EP 2005-809746   | 20051125 |
| CN 101080376   | A    | 20071128 | CN 2005-80040407 | 20051125 |
| KR 2007095300  | A    | 20070928 | KR 2007-7014327  | 20070622 |
| US 20080105865 | A1   | 20080508 | US 2007-791674   | 20070806 |

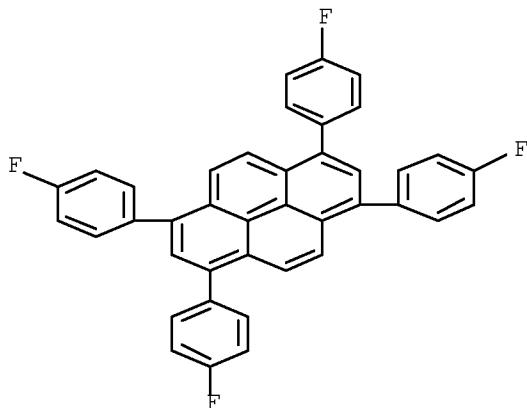
Abstract

A pyrene compound that when used in a light emitting transistor device, excels in both the properties of light emission and mobility; and a light emitting transistor device utilizing such a specified pyrene compound. As a main constituent of a luminescent layer of light emitting transistor device, use is made of a pyrene compound of the chemical formula I (R1 = heteroaryl, aryl (excluding Ph), C1-20-alkyl, alkenyl, alkynyl, silyl, halo).

Hit Structure

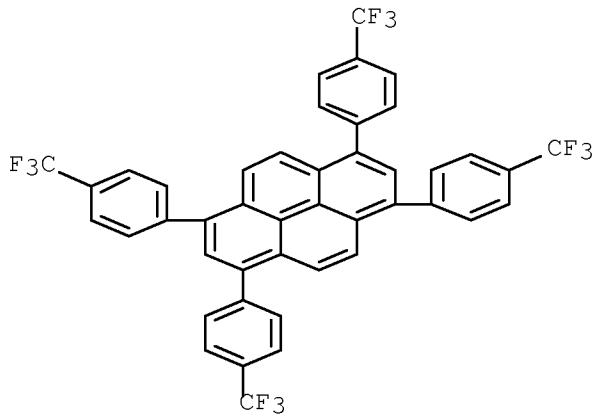
CAS Registry Number  
835878-24-5 CAPIUS

Chemical or Trade Name  
Pyrene, 1,3,6,8-tetrakis(4-fluorophenyl)- (CA INDEX NAME)



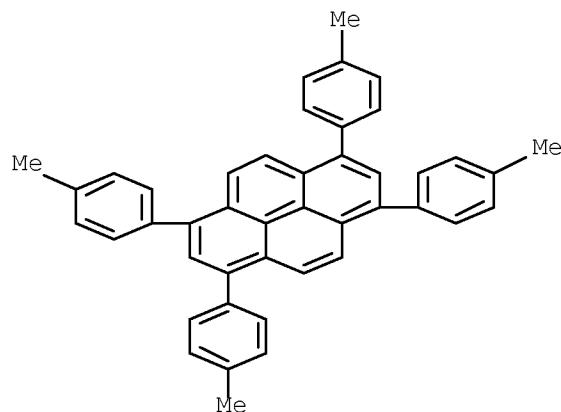
CAS Registry Number  
881853-23-2 CAPIUS

Chemical or Trade Name  
Pyrene, 1,3,6,8-tetrakis[4-(trifluoromethyl)phenyl]- (CA INDEX NAME)



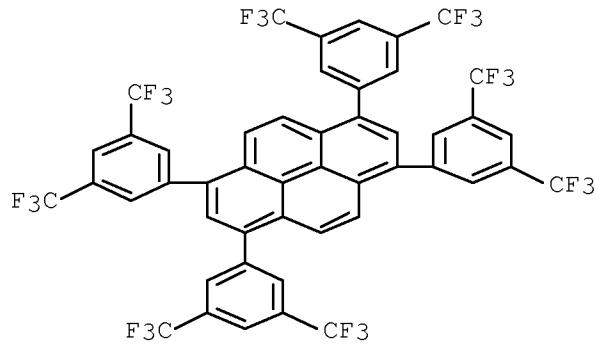
CAS Registry Number  
887909-71-9 CAPIUS

Chemical or Trade Name  
Pyrene, 1,3,6,8-tetrakis(4-methylphenyl)- (CA INDEX NAME)



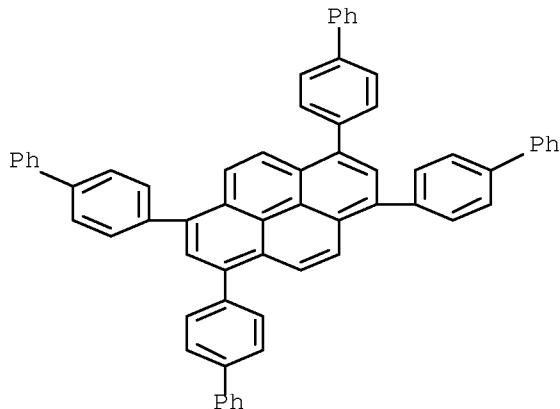
CAS Registry Number  
887909-73-1 CAPIUS

Chemical or Trade Name  
Pyrene, 1,3,6,8-tetrakis[3,5-bis(trifluoromethyl)phenyl]- (CA INDEX NAME)



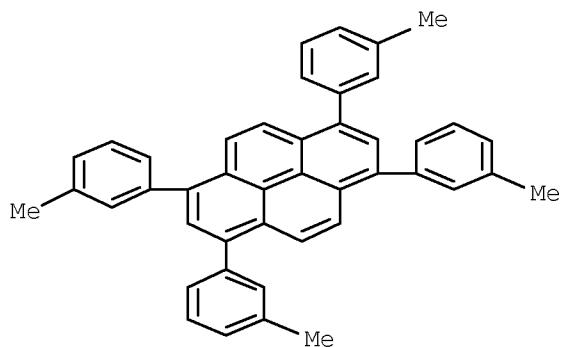
CAS Registry Number  
790273-07-3 CAPIUS

Chemical or Trade Name  
Pyrene, 1,3,6,8-tetrakis([1,1'-biphenyl]-4-yl)- (CA INDEX NAME)



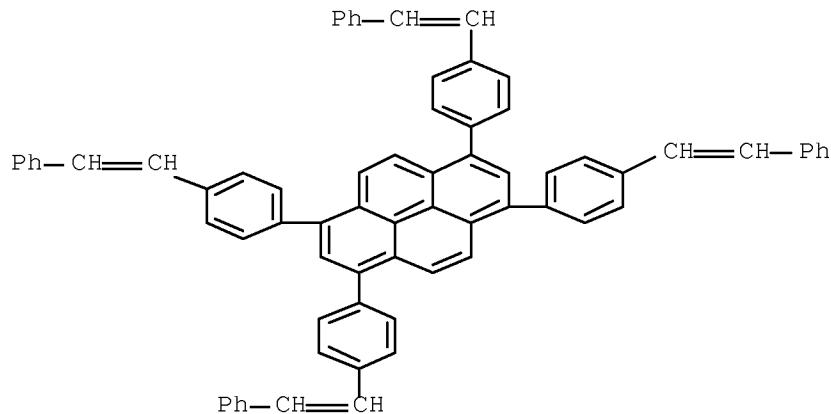
CAS Registry Number  
870133-71-4 CAPIUS

Chemical or Trade Name  
Pyrene, 1,3,6,8-tetrakis(3-methylphenyl)- (CA INDEX NAME)



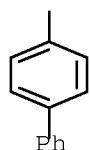
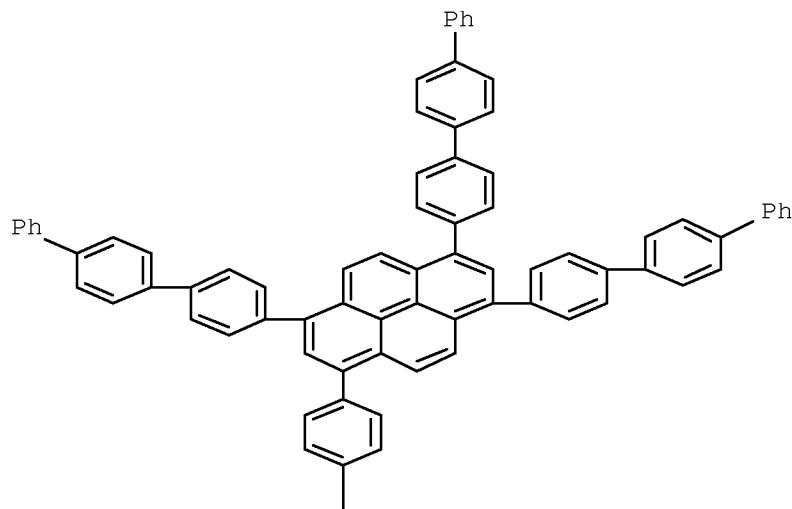
CAS Registry Number  
887909-55-9 CAPLUS

Chemical or Trade Name  
Pyrene, 1,3,6,8-tetrakis[4-(2-phenylethynyl)phenyl]- (CA INDEX NAME)



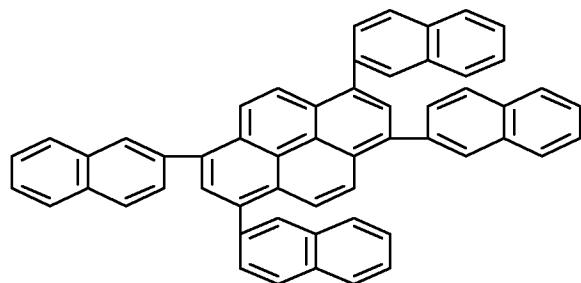
CAS Registry Number  
887909-57-1 CAPLUS

Chemical or Trade Name  
Pyrene, 1,3,6,8-tetrakis([1,1':4',1''-terphenyl]-4-yl)- (9CI) (CA INDEX NAME)



CAS Registry Number  
887909-59-3 CAplus

Chemical or Trade Name  
Pyrene, 1,3,6,8-tetra-2-naphthalenyl- (CA INDEX NAME)



OS.CITING REF COUNT: 4 THERE ARE 4 CAplus RECORDS THAT CITE THIS RECORD  
(8 CITINGS)

Accession Number  
2006510508 CAPLUS Full-textDocument Number  
145:17891Title  
Pyrene compound and, utilizing the same, light emitting transistor device and electroluminescence deviceAuthor/Inventor  
Oyamada, Takahito; Uchiuzou, Hiroyuki; Adachi, Chihaya; Akiyama, Seiji; Takahashi, TakayoshiPatent Assignee/Corporate Source  
Kyoto University, Japan; Nippon Telegraph and Telephone Corporation; Pioneer Corporation; Hitachi, Ltd.; Mitsubishi Chemical Corporation; Rohm Co., Ltd.Source  
PCT Int. Appl., 66 pp. CODEN: PIXXD2Document Type  
Patent

Language

Japanese

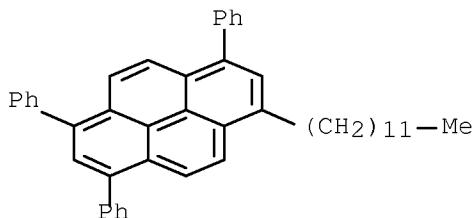
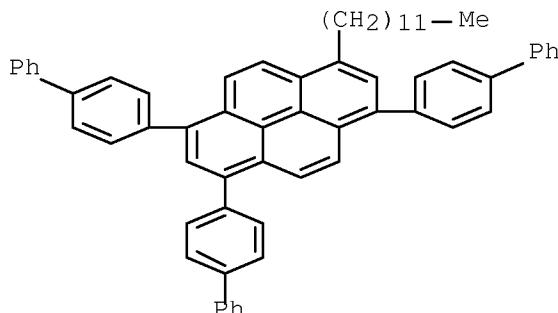
Patent Information

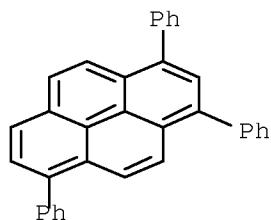
| PATENT NO.     | KIND | DATE     | APPLICATION NO.  | DATE     |
|----------------|------|----------|------------------|----------|
| WO 2006057325  | A1   | 20060601 | WO 2005-JP21647  | 20051125 |
| JP 2006176494  | A    | 20060706 | JP 2005-282590   | 20050928 |
| EP 1818322     | A1   | 20070815 | EP 2005-809745   | 20051125 |
| CN 101072743   | A    | 20071114 | CN 2005-80040399 | 20051125 |
| KR 2007093401  | A    | 20070918 | KR 2007-7014336  | 20070622 |
| US 20080012475 | A1   | 20080117 | US 2007-791613   | 20070806 |

## Abstract

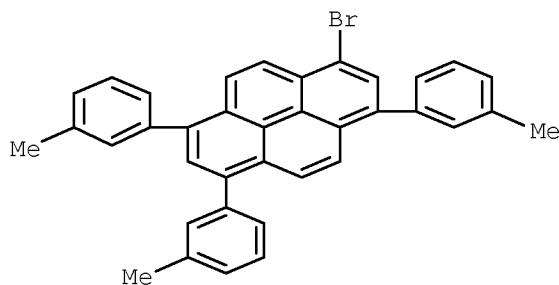
An organic phosphor of the following formula I (R1 = heteroaryl, aryl, C1-20-alkyl, cycloalkyl, alkenyl, etc.; R2 = heteroalkyl, aryl, C1-20-alkyl, cycloalkyl, alkenyl, etc.; R1 ≠ R2) that can be used in both a light emitting transistor device and an organic EL device. There is provided a light emitting transistor device or an organic EL device, wherein luminescence of such a specified asym. pyrene compound is utilized in a light emitting layer of a transistor device or a luminescent layer, hole transporting layer or electron transporting layer of organic electroluminescence device.

## Hit Structure

CAS Registry Number  
887917-92-2 CAPLUSChemical or Trade Name  
Pyrene, 1-dodecyl-3,6,8-triphenyl- (CA INDEX NAME)CAS Registry Number  
887917-94-4 CAPLUSChemical or Trade Name  
Pyrene, 1,3,6-tris([1,1'-biphenyl]-4-yl)-8-dodecyl- (CA INDEX NAME)CAS Registry Number  
887918-05-0 CAPLUSChemical or Trade Name  
Pyrene, 1,3,6-triphenyl- (CA INDEX NAME)

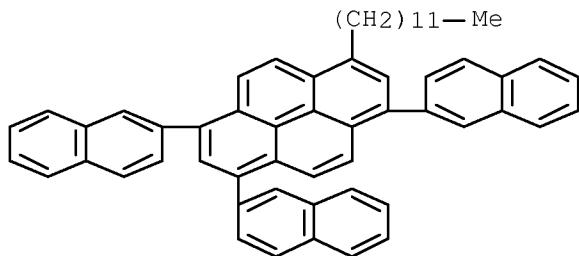


Chemical or Trade Name  
Pyrene, 1-bromo-3,6,8-tris(3-methylphenyl)- (CA INDEX NAME)



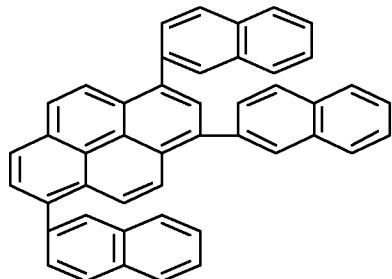
CAS Registry Number  
887917-98-8 CAPIUS

Chemical or Trade Name  
Pyrene, 1-dodecyl-3,6,8-tri-2-naphthalenyl- (CA INDEX NAME)



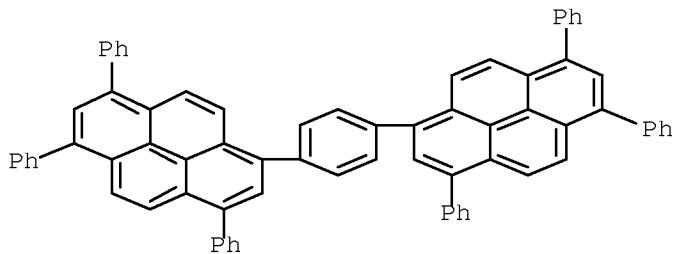
CAS Registry Number  
887918-03-8 CAPIUS

Chemical or Trade Name  
Pyrene, 1,3,6-tri-2-naphthalenyl- (CA INDEX NAME)



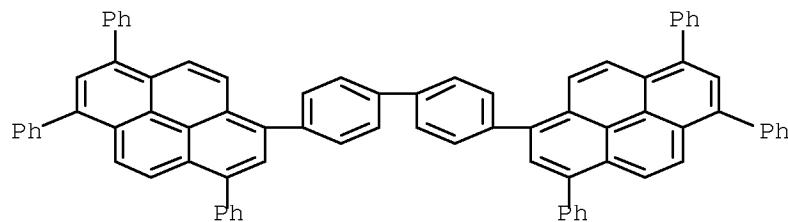
CAS Registry Number  
887918-09-4 CAPIUS

Chemical or Trade Name  
Pyrene, 1,3,6-triphenyl-8-[4-(3,6,8-triphenyl-1-pyrenyl)phenyl]- (CA INDEX NAME)



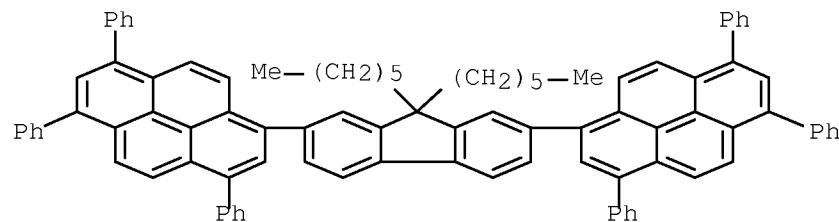
CAS Registry Number  
887918-12-9 CAPIUS

Chemical or Trade Name  
Pyrene, 1,1'-(1,1'-biphenyl)-4,4'-diylbis[3,6,8-triphenyl- (9CI) (CA INDEX NAME)



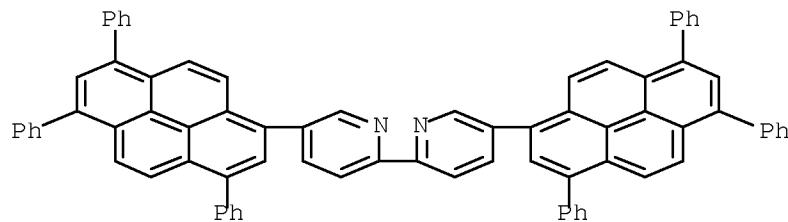
CAS Registry Number  
887918-16-3 CAPIUS

Chemical or Trade Name  
Pyrene, 1,1'-(9,9-dihexyl-9H-fluorene-2,7-diyl)bis[3,6,8-triphenyl- (CA INDEX NAME)



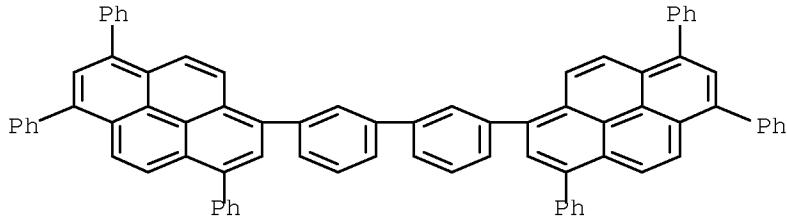
CAS Registry Number  
887918-21-0 CAPIUS

Chemical or Trade Name  
2,2'-Bipyridine, 5,5'-bis(3,6,8-triphenyl-1-pyrenyl)- (CA INDEX NAME)



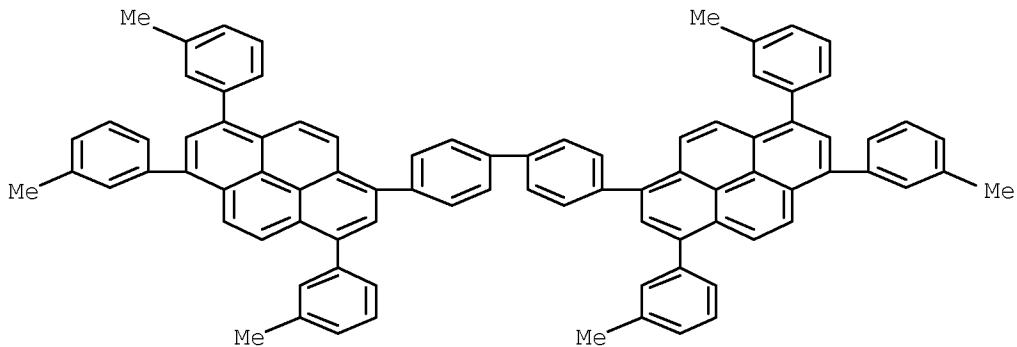
CAS Registry Number  
887918-23-2 CAPIUS

Chemical or Trade Name  
Pyrene, 1,1'-(1,1'-biphenyl)-3,3'-diylbis[3,6,8-triphenyl- (9CI) (CA INDEX NAME)



CAS Registry Number  
887918-32-3 CAPIUS

Chemical or Trade Name  
Pyrene, 1,1'-(1,1'-biphenyl)-4,4'-diylbis[3,6,8-tris(3-methylphenyl)-9,9'-biphenyl] (CA INDEX NAME)



OS.CITING REF COUNT: 4 THERE ARE 4 CAPIUS RECORDS THAT CITE THIS RECORD  
(7 CITINGS)

L5 ANSWER 22 OF 59 CAPIUS COPYRIGHT 2011 ACS on STN

Accession Number  
2006343128 CAPIUS Full-text

Document Number  
144391623

Title  
Electronic devices containing organic semiconductors with low halogen content

Author/Inventor  
Spreitzer, Hubert; Falcou, Aurelie; Scheurich, Rene; Schulte, Niels; Buesing, Arne; Stoessel, Philipp

Patent Assignee/Corporate Source  
Merck Patent GmbH, Germany

Source  
PCT Int. Appl., 31 pp. CODEN: PIXXD2

Document Type  
Patent

Language  
German

Patent Information

| PATENT NO.     | KIND | DATE     | APPLICATION NO. | DATE     |
|----------------|------|----------|-----------------|----------|
| WO 2006037458  | A1   | 20060413 | WO 2005-EP10112 | 20050920 |
| EP 1794218     | A1   | 20070613 | EP 2005-784377  | 20050920 |
| JP 2008516421  | T    | 20080515 | JP 2007-533903  | 20050920 |
| US 20080113468 | A1   | 20080515 | US 2007-664473  | 20070330 |

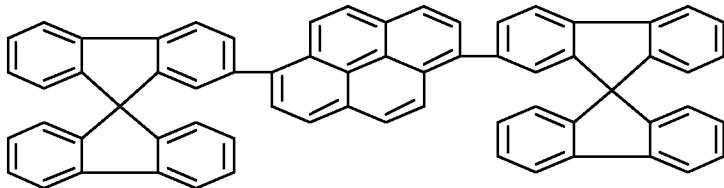
Abstract

The invention relates to electronic devices containing organic semiconductors with a halogen content < 20 ppm. As a result, the service life and efficiency of the corresponding electronic devices is increased, and such materials are more suitable for use in organic electronic devices than materials having higher halogen content. In one embodiment, low mol. weight organic or polymeric semiconductors are obtained by coupling reactions involving reactive halogens, followed by optional isolation of the semiconductors, and treatment with a reducing agent until the halogen content is < 20 ppm.

Hit Structure

CAS Registry Number  
723285-22-1 CAPIUS

Chemical or Trade Name  
9,9'-Spirobi[9H-fluorene], 2,2'-(1,6-pyrenediyl)bis- (CA INDEX NAME)



OS.CITING REF COUNT: 4 THERE ARE 4 CAPLUS RECORDS THAT CITE THIS RECORD  
(9 CITINGS)

L5 ANSWER 23 OF 59 CAPLUS COPYRIGHT 2011 ACS on STN

Accession Number

2006-13624 CAPLUS [Full-text](#)

Document Number

144:117443

Title

Organic electroluminescent device

Author/Inventor

Vestweber, Horst; Stoessel, Philipp; Gerhard, Anja; Parham, Amir

Patent Assignee/Corporate Source

Covion Organic Semiconductors G.m.b.H., Germany

Source

PCT Int. Appl., 36 pp. CODEN: PIXXD2

Document Type

Patent

Language

German

Patent Information

| PATENT NO.      | KIND | DATE     | APPLICATION NO.      | DATE     |
|-----------------|------|----------|----------------------|----------|
| WO 2006000388   | A1   | 20060105 | WO 2005-EP6727       | 20050622 |
| DE 102004031000 | A1   | 20060112 | DE 2004-102004031000 | 20040626 |
| EP 1761962      | A1   | 20070314 | EP 2005-753649       | 20050622 |
| EP 1761962      | B1   | 20100203 |                      |          |
| JP 2008504381   | T    | 20080214 | JP 2007-517189       | 20050622 |
| AT 457085       | T    | 20100215 | AT 2005-753649       | 20050622 |
| US 20090159874  | A1   | 20090625 | US 2007-630637       | 20070130 |

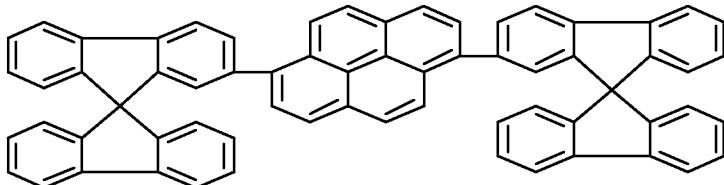
Abstract

Organic electroluminescent devices comprising a cathode, an anode, and  $\geq 1$  emitting layer are described in which the emitting layer comprises a host material 1-99.9 weight % and 0.1-99 weight % of a compound described by the general formula A(-X-C(R):C(Y)Z)3 (A = N, P, As, Sb, P-O, P-S, As-O, As-S, Sb-O, or Sb-S; X = at each occurrence independently selected optionally substituted C2-60 monovalent (hetero)aryl groups, with the restriction that Y does not incorporate any (un)substituted amino groups; Y = at each occurrence independently selected optionally substituted C1-40 alkyl groups; R = at each occurrence independently selected from H, CN, straight, branched, or cyclic optionally substituted C1-40 alkyl groups). Compds. are also claimed in which the Y and Z groups are joined by a covalent bond or by a bivalent bridging group having up to 5 bridging atoms.

Hit Structure

CAS Registry Number  
723285-22-1 CAPLUS

Chemical or Trade Name  
9,9'-Spirobi[9H-fluorene], 2,2'-(1,6-pyrenediyl)bis- (CA INDEX NAME)



OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD  
(4 CITINGS)

L5 ANSWER 24 OF 59 CAPLUS COPYRIGHT 2011 ACS on STN

Accession Number

2005-1350075 CAPLUS [Full-text](#)

Document Number

144:69631

Title

Process for preparation of fluorene derivatives as organic electroluminescent devices

Author/Inventor

Ito, Mitsunori; Yamamoto, Hiroshi; Hachiya, Satoshi; Kawamura, Hisayuki

Patent Assignee/Corporate Source

Idemitsu Kosan Co., Ltd., Japan

Source

PCT Int. Appl., 68 pp. CODEN: PIXXD2

Document Type

Patent

Language

Japanese

Patent Information

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------|------|------|-----------------|------|
|            |      |      |                 |      |

|                |    |          |                  |          |
|----------------|----|----------|------------------|----------|
| WO 2005123634  | A1 | 20051229 | WO 2005-JP9024   | 20050518 |
| CN 1842510     | A  | 20061004 | CN 2005-80001007 | 20050518 |
| EP 1780191     | A1 | 20070502 | EP 2005-741059   | 20050518 |
| US 20060159956 | A1 | 20060720 | US 2005-282640   | 20051121 |
| US 7683225     | B2 | 20100323 |                  |          |
| KR 2007028284  | A  | 20070312 | KR 2006-7006217  | 20060330 |
| IN 2006CN01079 | A  | 20070817 | IN 2006-CN1079   | 20060330 |
| US 20080303433 | A1 | 20081211 | US 2008-178807   | 20080724 |
| US 7781628     | B2 | 20100824 |                  |          |
| US 20100277063 | A1 | 20101104 | US 2010-838839   | 20100719 |

#### Abstract

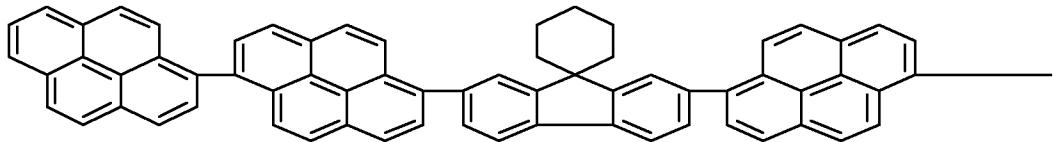
This invention pertains to a method for producing fluorene derivs. with general formula of (A-X)p-(FL-B)m-(Y-C)n [wherein p = 0-10; n = 0-10; p+n >1; m = 1-10; X and Y = independently a bond, (un)substituted aryl, alkylene, or alkenylene; A and C = independently (un)substituted aryl, heteroaryl, etc.; B = a bond, (un)substituted aryl, alkylene, or alkenylene; FL = (un)substituted fluorene]. For example, the compound I was prepared in a multi-step synthesis starting from 1-iodopyrene and 4-bromophenylboronic acid. Also disclosed is an organic electroluminescent device having high luminescent efficiency wherein an organic thin film layer composed of one or more layers including at least a light-emitting layer is interposed between a cathode and an anode.

#### Hit Structure

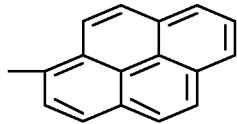
CAS Registry Number  
872050-46-9 CAPLUS

Chemical or Trade Name  
Spiro[cyclohexane-1,9'-[9H]fluorene], 2',7'-bis([1,1'-biphenyl]-6-yl)-  
(9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



OS CITING REF COUNT: 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD  
(5 CITINGS)

Accession Number

20051292773 CAPLUS [Full-text](#)

Document Number

144:42963

Title

Asymmetric pyrene derivative and organic electroluminescent device using same to improve luminous efficiency and long life

Author/Inventor

Kubota, Mineyuki; Funahashi, Masakazu; Hosokawa, Chishio

Patent Assignee/Corporate Source

Idemitsu Kosan Co., Ltd., Japan

Source

PCT Int. Appl., 48 pp. CODEN: PIXXD2

Document Type

Patent

Language

Japanese

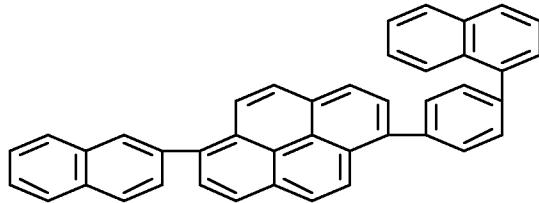
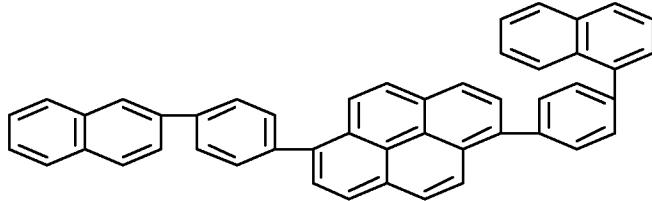
Patent Information

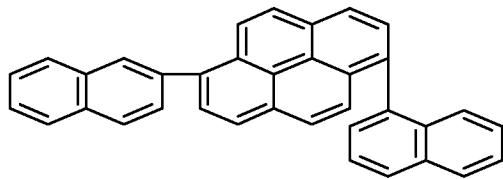
| PATENT NO.     | KIND | DATE     | APPLICATION NO.  | DATE     |
|----------------|------|----------|------------------|----------|
| WO 2005115950  | A1   | 20051208 | WO 2005-JP8494   | 20050510 |
| EP 1749809     | A1   | 20070207 | EP 2005-739101   | 20050510 |
| CN 1960957     | A    | 20070509 | CN 2005-80017149 | 20050510 |
| US 20060154107 | A1   | 20060713 | US 2005-282582   | 20051121 |
| US 7763761     | B2   | 20100727 |                  |          |
| KR 2007029717  | A    | 20070314 | KR 2006-7024933  | 20061127 |
| IN 2006CN04355 | A    | 20070629 | IN 2006-CN4355   | 20061127 |
| US 20100308718 | A1   | 20101209 | US 2010-795216   | 20100607 |
| JP 2011066446  | A    | 20110331 | JP 2010-277867   | 20101214 |

Abstract

Disclosed are asym. pyrene derivs. having substituents  $((L)mAr)n$  and  $((L')sAr')t$  ( $Ar, Ar' = C6-50-aromatic group$ ;  $L, L' = phenylene, naphthalenylene, fluorenylene, dibenzosilolylene$ ;  $m = 0-2$ ;  $n = 1-4$ ;  $s = 0-2$ ;  $t = 0-4$ ). An organic electroluminescent device comprising an organic thin film layer which is interposed between an anode and a cathode and composed of one or more layers including at least a light-emitting layer is also disclosed wherein the organic thin film layer contains at least one of the asym. pyrene derivs. by itself or as a component of a mixture. Such an organic electroluminescent device has high luminous efficiency and long life due to the asym. pyrene derivative

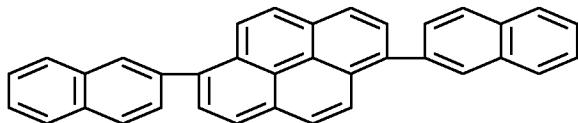
Hit Structure

CAS Registry Number  
870774-21-3 CAPLUSChemical or Trade Name  
Pyrene, 1-(2-naphthalenyl)-6-[4-(1-naphthalenyl)phenyl]- (CA INDEX NAME)CAS Registry Number  
870774-17-7 CAPLUSChemical or Trade Name  
Pyrene, 1-[4-(1-naphthalenyl)phenyl]-6-[4-(2-naphthalenyl)phenyl]- (CA INDEX NAME)CAS Registry Number  
870774-18-8 CAPLUSChemical or Trade Name  
Pyrene, 1-(1-naphthalenyl)-6-(2-naphthalenyl)- (CA INDEX NAME)



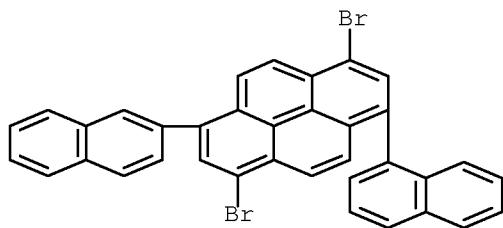
CAS Registry Number  
663954-28-7 CAPIUS

Chemical or Trade Name  
Pyrene, 1,6-di-2-naphthalenyl- (CA INDEX NAME)



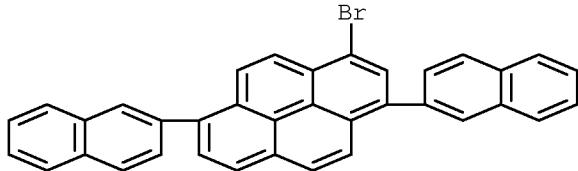
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Chemical or Trade Name  
Pyrene, 1,6-dibromo-3-(1-naphthalenyl)-8-(2-naphthalenyl)- (CA INDEX NAME)



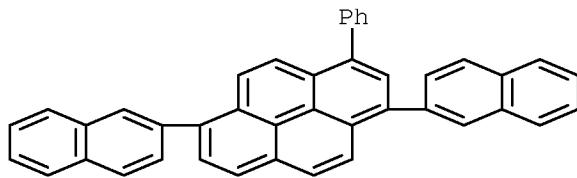
CAS Registry Number  
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Chemical or Trade Name  
Pyrene, 3-bromo-1,6-di-2-naphthalenyl- (CA INDEX NAME)



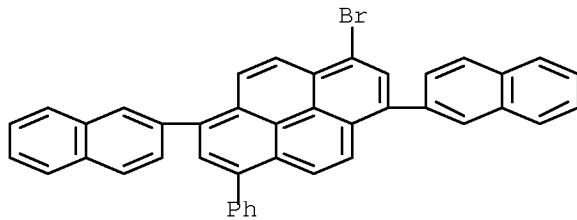
CAS Registry Number  
870774-34-8 CAPIUS

Chemical or Trade Name  
Pyrene, 1,6-di-2-naphthalenyl-3-phenyl- (CA INDEX NAME)



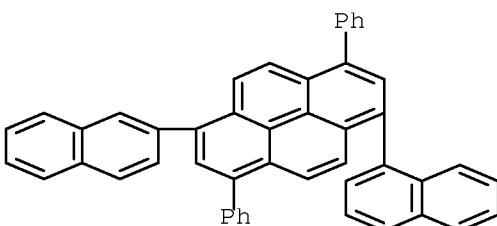
CAS Registry Number  
870774-35-9 CAPIUS

Chemical or Trade Name  
Pyrene, 1-bromo-3,8-di-2-naphthalenyl-6-phenyl- (CA INDEX NAME)



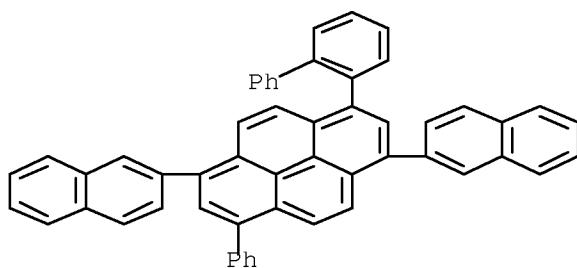
CAS Registry Number  
870774-23-5 CAPIUS

Chemical or Trade Name  
Pyrene, 1-(1-naphthalenyl)-6-(2-naphthalenyl)-3,8-diphenyl- (CA INDEX NAME)



CAS Registry Number  
870774-24-6 CAPIUS

Chemical or Trade Name  
Pyrene, 1-[1,1'-biphenyl]-2-yl-3,8-di-2-naphthalenyl-6-phenyl- (CA INDEX NAME)



OS.CITING REF COUNT: 8 THERE ARE 8 CAPIUS RECORDS THAT CITE THIS RECORD  
(24 CITINGS)

143:459885

Title

Process for preparation of 1,6-dihalopyrene derivatives

Author/Inventor

Funahashi, Masakazu

Patent Assignee/Corporate Source

Idemitsu Kosan Co., Ltd., Japan

Source

PCT Int. Appl., 34 pp. CODEN: PIXXD2

Document Type

Patent

Language

Japanese

Patent Information

| PATENT NO.     | KIND | DATE     | APPLICATION NO.  | DATE     |
|----------------|------|----------|------------------|----------|
| WO 2005108335  | A1   | 20051117 | WO 2004-JP14016  | 20040917 |
| EP 1746080     | A1   | 20070124 | EP 2004-773400   | 20040917 |
| CN 1953951     | A    | 20070425 | CN 2004-80042997 | 20040917 |
| US 20080015399 | A1   | 20080117 | US 2006-568578   | 20061102 |
| KR 2007011460  | A    | 20070124 | KR 2006-7023411  | 20061108 |
| IN 2006CN04133 | A    | 20070615 | IN 2006-CN4133   | 20061110 |

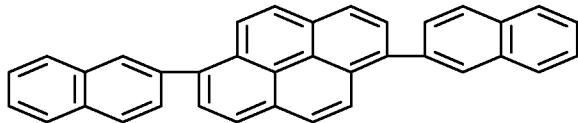
Abstract

This invention pertains to a method for producing 1,6-disubstituted 3,8-dihalopyrene derivs. represented by the following general formula I [wherein R1 and R2 = independently (un)substituted alkyl, aryl, aralkyl, cycloalkyl, alkoxy, aryloxy, halo, cyano, or silyl; and X = halo]. For example, 1,6-dibromopyrene was reacted with isopropylmagnesium bromide in 1,4-dioxane in the presence of dichlorodiphenylphosphinoferrocene)palladium to give 1,6-disopropylpyrene (31%). 1,6-Diisopropylpyrene was then treated with NBS in DMF to afford 1,6-dibromo-3,8-diisopropylpyrene (28%). I are useful as an intermediate for dyes, etc., especially as an intermediate for a charge-transporting material for electrophotoreceptors, material for organic electroluminescent elements, and hole-transporting material or luminescent material for organic electroluminescent elements.

Hit Structure

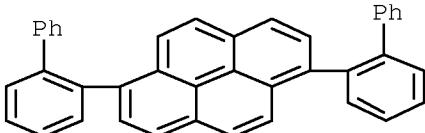
CAS Registry Number  
663954-28-7 CAPLUS

Chemical or Trade Name  
Pyrene, 1,6-di-2-naphthalenyl- (CA INDEX NAME)



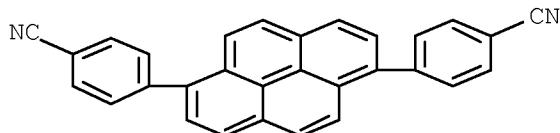
CAS Registry Number  
869340-09-0 CAPLUS

Chemical or Trade Name  
Pyrene, 1,6-bis([1,1'-biphenyl]-2-yl)- (CA INDEX NAME)



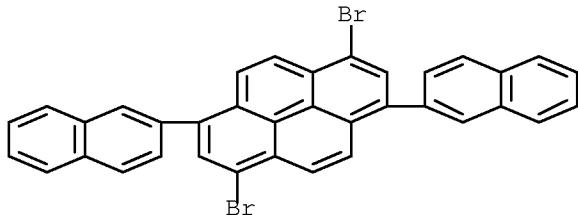
CAS Registry Number  
869340-10-3 CAPLUS

Chemical or Trade Name  
Benzonitrile, 4,4'-(1,6-pyrenediyl)bis- (CA INDEX NAME)



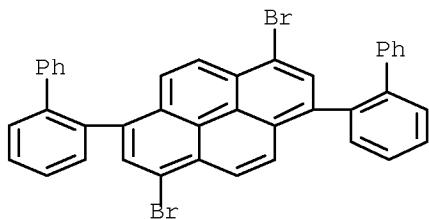
CAS Registry Number  
869340-04-5 CAPLUS

Chemical or Trade Name  
Pyrene, 1,6-dibromo-3,8-di-2-naphthalenyl- (CA INDEX NAME)



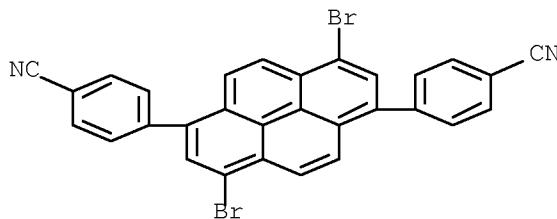
CAS Registry Number  
869340-05-6 CAPIUS

Chemical or Trade Name  
Pyrene, 1,6-bis([1,1'-biphenyl]-2-yl)-3,8-dibromo- (CA INDEX NAME)



CAS Registry Number  
869340-06-7 CAPIUS

Chemical or Trade Name  
Benzonitrile, 4,4'-(3,8-dibromo-1,6-pyrenediyl)bis- (CA INDEX NAME)



OS.CITING REF COUNT: 1 THERE ARE 1 CAPIUS RECORDS THAT CITE THIS RECORD  
(3 CITINGS)

L5 ANSWER 27 OF 59 CAPIUS COPYRIGHT 2011 ACS on STN

Accession Number  
20051220376 CAPIUS Full Text

Document Number  
143:485899

Title  
Aromatic amine derivative, organic electroluminescent element employing the same, and process for producing aromatic amine derivative

Author/Inventor

Funahashi, Masakazu

Patent Assignee/Corporate Source

Idemitsu Kosan Co., Ltd., Japan

Source

PCT Int. Appl., 87 pp. CODEN: PIXXD2

Document Type

Patent

Language

Japanese

Patent Information

| PATENT NO.     | KIND | DATE     | APPLICATION NO.  | DATE     |
|----------------|------|----------|------------------|----------|
| WO 2005108348  | A1   | 20051117 | WO 2004-JP14020  | 20040917 |
| EP 1746085     | A1   | 20070124 | EP 2004-773404   | 20040917 |
| CN 1953960     | A    | 20070425 | CN 2004-80042994 | 20040917 |
| JP 4188401     | B2   | 20081126 | JP 2006-512914   | 20040917 |
| KR 2007011484  | A    | 20070124 | KR 2006-7023676  | 20061110 |
| IN 2006CN04140 | A    | 20070615 | IN 2006-CN4140   | 20061110 |
| US 20070252511 | A1   | 20071101 | US 2006-596299   | 20061113 |

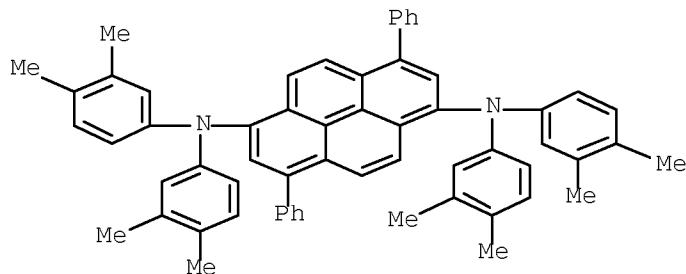
Abstract

An aromatic amine derivative having a specific structure comprising a substituted pyrene structure and a substituted diphenylamino group bonded thereto; an organic electroluminescent element comprising a cathode, an anode, and an organic thin film layer sandwiched therebetween which is composed of one or more layers comprising a luminescent layer, wherein at least one layer of the organic thin film layer consists of the aromatic amine derivative alone or contains the derivative as a component of a mixture; and a process for producing the aromatic amine derivative. The organic electroluminescent element has a long life and a high luminescent efficiency and emits a blue color. The aromatic amine derivative realizes the element.

Hit Structure

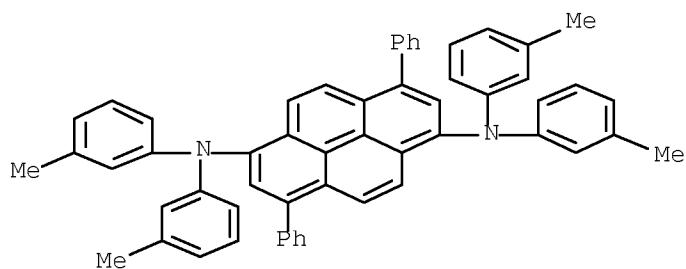
CAS Registry Number  
764657-27-4 CAPIUS

Chemical or Trade Name  
1,6-Pyrenediamine, N1,N1,N6,N6-tetrakis(3,4-dimethylphenyl)-3,8-diphenyl- (CA INDEX NAME)



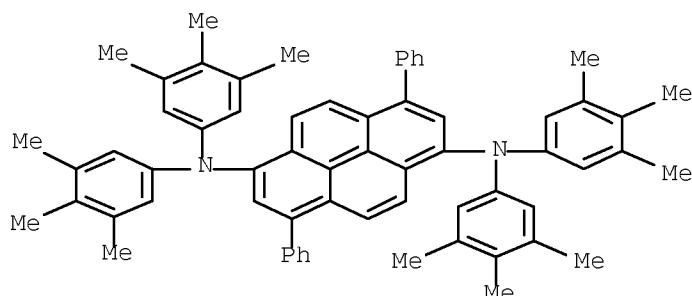
CAS Registry Number  
869496-83-3 CAPIUS

Chemical or Trade Name  
1,6-Pyrenediamine, N1,N1,N6,N6-tetrakis(3-methylphenyl)-3,8-diphenyl- (CA INDEX NAME)



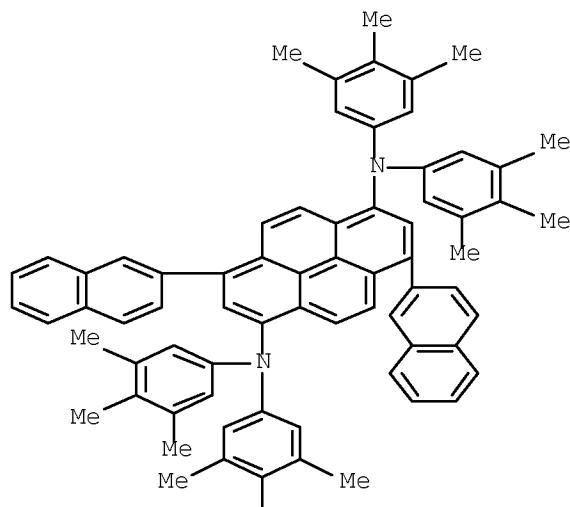
CAS Registry Number  
869496-84-4 CAPIUS

Chemical or Trade Name  
1,6-Pyrenediamine, 3,8-diphenyl-N1,N1,N6,N6-tetrakis(3,4,5-trimethylphenyl)- (CA INDEX NAME)



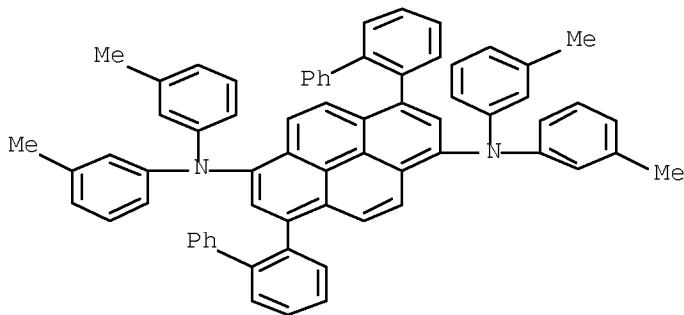
CAS Registry Number  
869496-89-9 CAPIUS

Chemical or Trade Name  
1,6-Pyrenediamine, 3,8-di-2-naphthalenyl-N1,N1,N6,N6-tetrakis(3,4,5-trimethylphenyl)- (CA INDEX NAME)



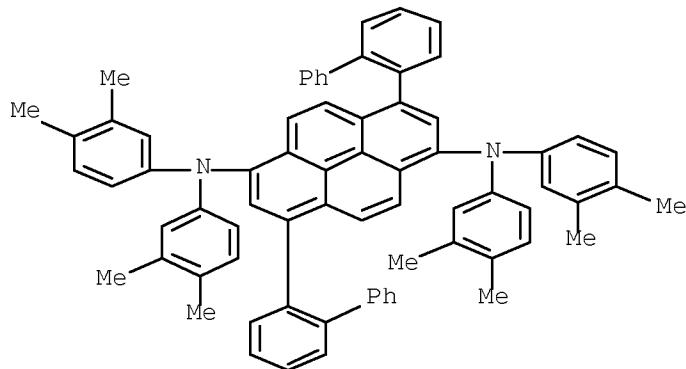
CAS Registry Number  
869496-85-5 CAPIUS

Chemical or Trade Name  
1,6-Pyrenediamine, 3,8-bis([1,1'-biphenyl]-2-yl)-N1,N1,N6,N6-tetrakis(3-methylphenyl)- (CA INDEX NAME)



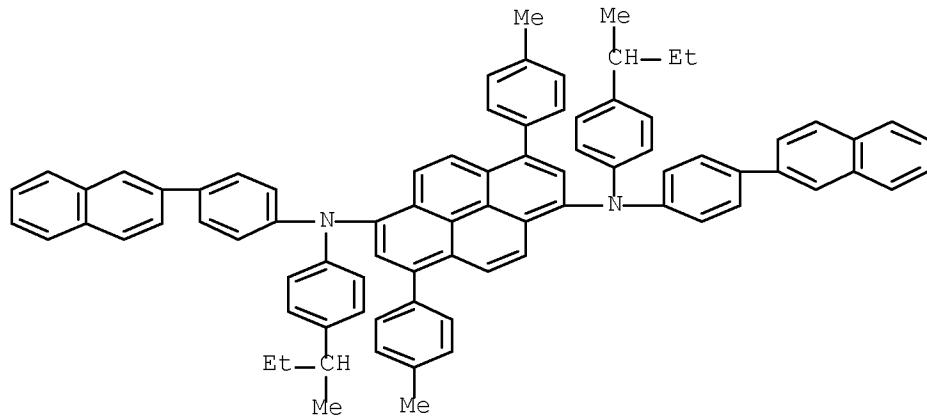
CAS Registry Number  
869496-86-6 CAPIUS

Chemical or Trade Name  
1,6-Pyrenediamine, 3,8-bis([1,1'-biphenyl]-2-yl)-N1,N1,N6,N6-tetrakis(3,4-dimethylphenyl)- (CA INDEX NAME)



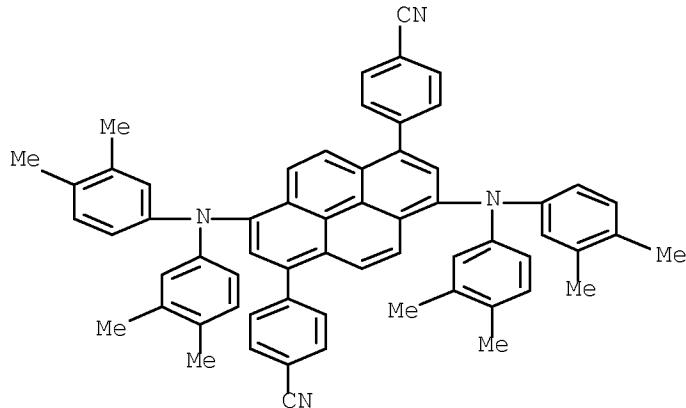
CAS Registry Number  
869496-87-7 CAPIUS

Chemical or Trade Name  
1,6-Pyrenediamine, 3,8-bis(4-methylphenyl)-N1,N6-bis[4-(1-methylpropyl)phenyl]-N1,N6-bis[4-(2-naphthalenyl)phenyl]- (CA INDEX NAME)



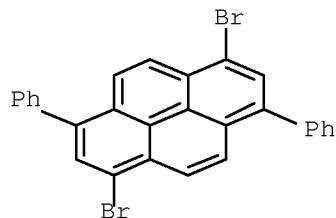
CAS Registry Number  
869496-88-8 CAPIUS

Chemical or Trade Name  
Benzonitrile, 4,4'-[3,8-bis(bis(3,4-dimethylphenyl)amino)-1,6-pyrenediyl]bis- (9CI) (CA INDEX NAME)



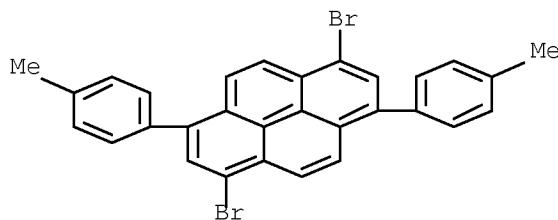
CAS Registry Number  
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Chemical or Trade Name  
Pyrene, 1,6-dibromo-3,8-diphenyl- (CA INDEX NAME)



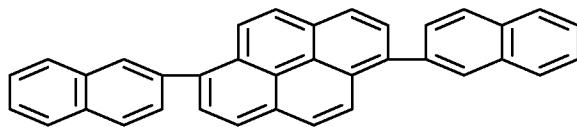
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Chemical or Trade Name  
Pyrene, 1,6-dibromo-3,8-bis(4-methylphenyl)- (CA INDEX NAME)



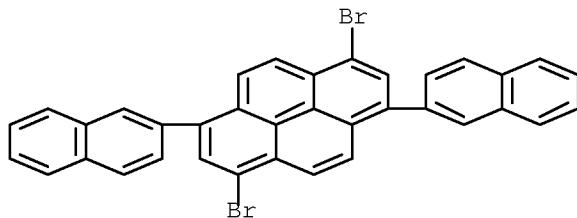
CAS Registry Number  
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Chemical or Trade Name  
Pyrene, 1,6-di-2-naphthalenyl- (CA INDEX NAME)



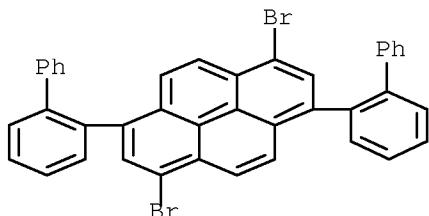
CAS Registry Number  
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Chemical or Trade Name  
Pyrene, 1,6-dibromo-3,8-di-2-naphthalenyl- (CA INDEX NAME)



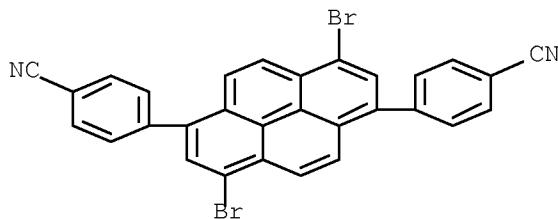
CAS Registry Number  
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Chemical or Trade Name  
Pyrene, 1,6-bis([1,1'-biphenyl]-2-yl)-3,8-dibromo- (CA INDEX NAME)



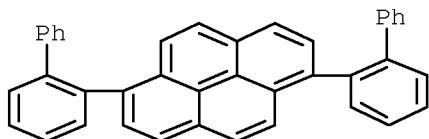
CAS Registry Number  
869340-06-7 CAPIUS

Chemical or Trade Name  
Benzonitrile, 4,4'-(3,8-dibromo-1,6-pyrenediyl)bis- (CA INDEX NAME)



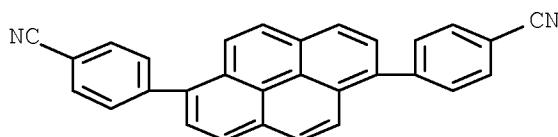
CAS Registry Number  
869340-09-0 CAPIUS

Chemical or Trade Name  
Pyrrene, 1,6-bis([1,1'-biphenyl]-2-yl)- (CA INDEX NAME)



CAS Registry Number  
869340-10-3 CAPIUS

Chemical or Trade Name  
Benzonitrile, 4,4'-(1,6-pyrenediyl)bis- (CA INDEX NAME)



OS.CITING REF COUNT: 8 THERE ARE 8 CAPIUS RECORDS THAT CITE THIS RECORD  
(23 CITINGS)

L5 ANSWER 28 OF 59 CAPIUS COPYRIGHT 2011 ACS on STN

Accession Number  
20051193684 CAPIUS Full-text

Document Number  
143:449114

Title  
Organic electroluminescent device containing metal element and its fabrication process

Author/Inventor  
Itai, Yuichiro; Nakayama, Masaya

Patent Assignee/Corporate Source  
Fujitsu Limited, Japan

Source  
PCT Int. Appl., 28 pp. CODEN: PIXD2

Document Type  
Patent

Language  
Japanese

Patent Information

|            |      |      |                 |      |
|------------|------|------|-----------------|------|
| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------|------|------|-----------------|------|

|                |    |          |                  |          |
|----------------|----|----------|------------------|----------|
| WO 2005107329  | A1 | 20051110 | WO 2004-JP6047   | 20040427 |
| CN 1977567     | A  | 20070606 | CN 2004-80042888 | 20040427 |
| CN 100581309   | C  | 20100113 |                  |          |
| US 20070231597 | A1 | 20071004 | US 2006-587692   | 20061026 |
| US 7737632     | B2 | 20100615 |                  |          |
| KR 2007015438  | A  | 20070202 | KR 2006-7024598  | 20061123 |
| KR 832763      | B1 | 20080527 |                  |          |
| US 20100216269 | A1 | 20100826 | US 2010-7711127  | 20100430 |

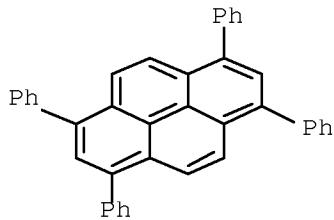
Abstract

The invention relates to an organic **electroluminescent** device (EL) comprising a pos. electrode and a neg. electrode and, interposed there-between, a laminate structure of organic films including at least a luminescent layer, a hole transport layer adjacent to the pos. electrode side of the luminescent layer and an electron transport layer adjacent to the neg. electrode side of the luminescent layer, wherein at least one of the organic films constituting the laminate structure contains a metal element exhibiting reactivity with water or oxygen.

Hit Structure

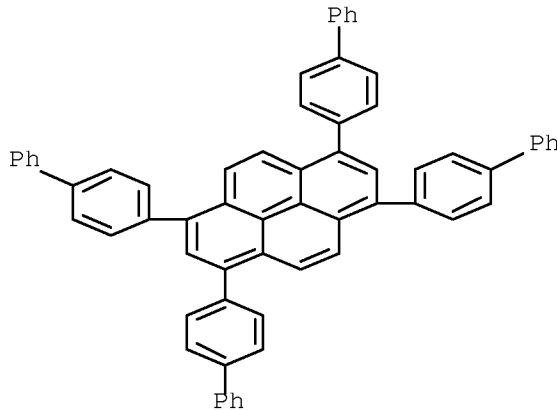
CAS Registry Number  
13638-82-9 CAPIUS

Chemical or Trade Name  
Pyrene, 1,3,6,8-tetraphenyl- (CA INDEX NAME)



CAS Registry Number  
790273-07-3 CAPIUS

Chemical or Trade Name  
Pyrene, 1,3,6,8-tetrakis([1,1'-biphenyl]-4-yl)- (CA INDEX NAME)



Accession Number

20051175780 CAPLUS [Full-text](#)

Document Number

143:442452

Title

Electroluminescent fluorinated pyrenes and LED devices made with such compounds.

Author/Inventor

Ionkin, Alex Sergey; Wang, Ying

Patent Assignee/Corporate Source

E.I. Du Pont De Nemours and Company, USA

Source

U.S. Pat. Appl. Publ., 11 pp. CODEN: USXXCO

Document Type

Patent

Language

English

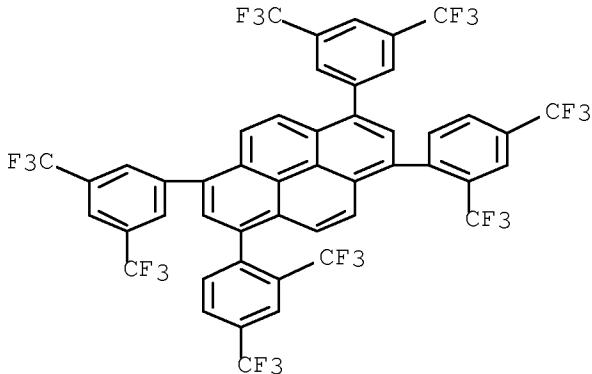
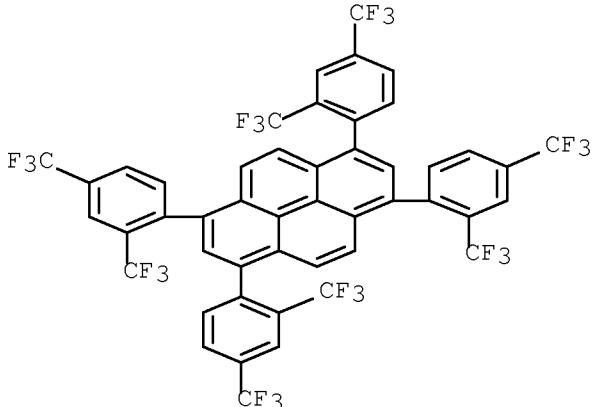
Patent Information

| PATENT NO.     | KIND | DATE     | APPLICATION NO. | DATE     |
|----------------|------|----------|-----------------|----------|
| US 20050244645 | A1   | 20051103 | US 2004-833787  | 20040428 |
| US 7358406     | B2   | 20080415 |                 |          |

Abstract

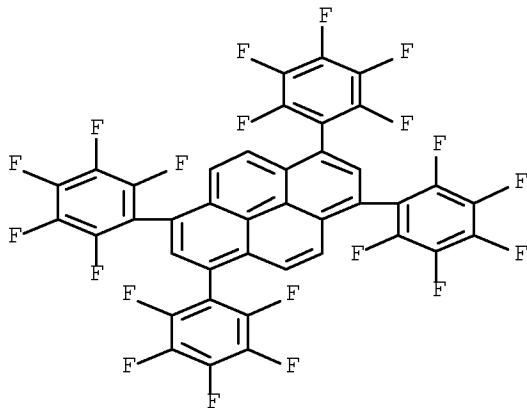
Fluorinated pyrenes I (R = H or fluoro- or fluoroalkyl-substituted aryl group) prepared by Suzuki coupling from chloro-substituted pyrenes and fluoro-derivs. of arylboronic acid are used in an active layer of LED sandwiched between two elec. contact layers. Thus, 1,3,6,8-tetrakis-[3,5-trifluoromethyl]phenyl]pyrene prepared by mixing 3.95 g of 1,3,6,8-tetrachloropyrene, 15.0 g of 3,5-bis(trifluoromethyl)phenylboronic acid, 1.33 g of tris(dibenzylideneacetone)bis(palladium), 0.64 g of bis(1,1-dimethylethyl)trimethylsilylphosphine, 18.95 g of cesium carbonate and 100 mL of dioxane 24 h at room temperature having quantum yield of fluorescence >0.6 was used in OLED devices fabricated by the thermal material and carbazole biphenyl as a host material.

Hit Structure

CAS Registry Number  
868555-69-5 CAPLUSChemical or Trade Name  
Pyrene, 1,8-bis[2,4-bis(trifluoromethyl)phenyl]-3,6-bis[3,5-bis(trifluoromethyl)phenyl]- (CA INDEX NAME)CAS Registry Number  
868555-70-8 CAPLUSChemical or Trade Name  
Pyrene, 1,3,6,8-tetrakis[2,4-bis(trifluoromethyl)phenyl]- (CA INDEX NAME)

CAS Registry Number  
868555-71-9 CAPLUS

Chemical or Trade Name  
Pyrene, 1,3,6,8-tetrakis(2,3,4,5,6-pentafluorophenyl)- (CA INDEX NAME)



L5 ANSWER 30 OF 59 CAPLUS COPYRIGHT 2011 ACS on STN

Accession Number  
20051155359 CAPLUS [Full-text](#)

Document Number  
143:413225

Title  
Preparation of silylated pyrenes and their use in active layers of electroluminescent devices

Author/Inventor  
Ionkin, Alex Sergey; Wang, Ying

Patent Assignee/Corporate Source  
E. I. Du Pont De Nemours and Company, USA

Source  
U.S. Pat. Appl. Publ., 9 pp. CODEN: USXXCO

Document Type  
Patent

Language  
English

Patent Information

| PATENT NO.     | KIND | DATE     | APPLICATION NO. | DATE     |
|----------------|------|----------|-----------------|----------|
| US 20050238910 | A1   | 20051027 | US 2004-831845  | 20040426 |
| US 7233019     | B2   | 20070619 |                 |          |

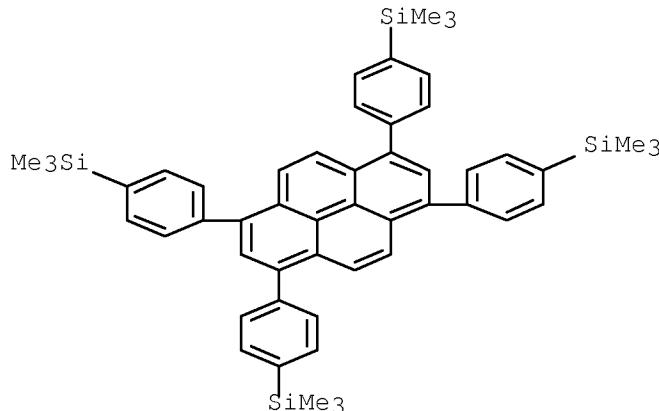
Abstract

This invention relates to electroluminescent silylated pyrene compds. It also relates to electronic devices in which the active layer includes an electroluminescent silylated pyrene compound. Thus, e.g., Suzuki coupling of 1,3,6,8-tetrachloropyrene with 3-(trimethylsilyl)phenylboronic acid in presence of Pd2dba3, tert-Bu2PCH2SiMe3 (preparation given), and Cs2CO3 in dioxane afforded 12.68% 1,3,6,8-tetrakis[3-(trimethylsilyl)phenyl]pyrene that exhibited an emission maximum at 420 nm in CH2Cl2 and that was fabricated into an OLED as emitter with peak efficiency of 0.6 cd/A, peak radiance 700 cd/m2, and peak λ's of 450 and 490 nm.

Hit Structure

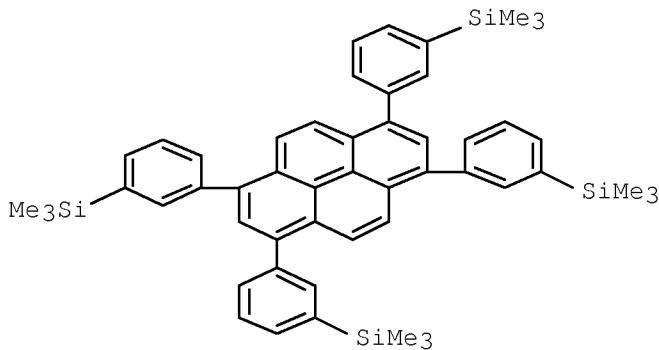
CAS Registry Number  
867058-49-9 CAPLUS

Chemical or Trade Name  
Pyrene, 1,3,6,8-tetrakis(4-(trimethylsilyl)phenyl)- (CA INDEX NAME)



CAS Registry Number

Chemical or Trade Name  
Pyrene, 1,3,6,8-tetrakis[3-(trimethylsilyl)phenyl]- (CA INDEX NAME)



OS.CITING REF COUNT: 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD  
(2 CITINGS)

L5 ANSWER 31 OF 59 CAPLUS COPYRIGHT 2011 ACS on STN

Accession Number  
20051154873 CAPLUS [Full-text](#)

Document Number  
143:429826

Title  
Organic electroluminescent device and organic electroluminescent display

Author/Inventor  
Itai, Yuichiro

Patent Assignee/Corporate Source  
Fujitsu Limited, Japan

Source  
PCT Int. Appl., 32 pp. CODEN: PIXXD2

Document Type  
Patent

Language  
Japanese

Patent Information

| PATENT NO.     | KIND | DATE     | APPLICATION NO. | DATE     |
|----------------|------|----------|-----------------|----------|
| WO 2005101911  | A1   | 20051027 | WO 2004-JP4662  | 20040331 |
| TW 252051      | B    | 20060321 | TW 2004-108675  | 20040330 |
| JP 4438003     | B2   | 20100324 | JP 2006-512162  | 20040331 |
| US 20070285005 | A1   | 20071213 | US 2007-594600  | 20070608 |
| US 7871711     | B2   | 20110118 |                 |          |

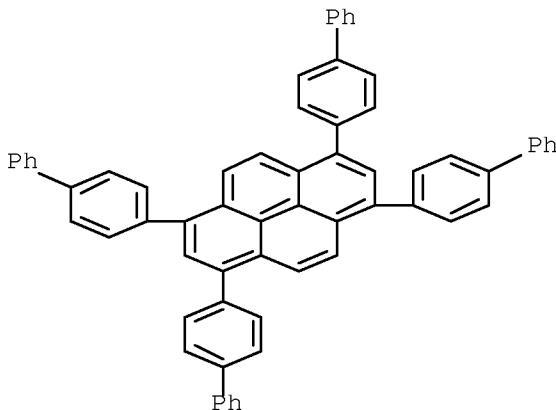
Abstract

An organic electroluminescent (EL) device comprises an anode, a hole injection layer, a hole transport layer, a blue light-emitting layer, a hole blocking layer, an electron transport layer, and a cathode formed sequentially on a glass substrate wherein the chromaticity of blue is enhanced while prolonging the lifetime by composing the electron transport layer of an electron transport material and a light-emitting material having a peak wavelength of emission spectrum longer than 555 nm, consuming holes by the light-emitting material and suppressing deterioration of the electron transport material.

Hit Structure

CAS Registry Number  
790273-07-3 CAPLUS

Chemical or Trade Name  
Pyrene, 1,3,6,8-tetrakis([1,1'-biphenyl]-4-yl)- (CA INDEX NAME)



L5 ANSWER 32 OF 59 CAPLUS COPYRIGHT 2011 ACS on STN

Accession Number  
20051153554 CAPLUS [Full-text](#)

Document Number  
143:429803

Title  
Organic electroluminescent device

Author/Inventor

Funabashi, Masakazu

Patent Assignee/Corporate Source  
Idemitsu Kosan Co., Ltd., Japan

Source  
Jpn. Kokai Tokkyo Koho, 28 pp. CODEN: JKXXAF

Document Type  
Patent

Language

Japanese

Patent Information

| PATENT NO.     | KIND | DATE     | APPLICATION NO.  | DATE     |
|----------------|------|----------|------------------|----------|
| JP 2005302667  | A    | 20051027 | JP 2004-120823   | 20040415 |
| WO 2005101913  | A1   | 20051027 | WO 2005-JP6898   | 20050408 |
| EP 1737277     | A1   | 20061227 | EP 2005-728719   | 20050408 |
| CN 1943278     | A    | 20070404 | CN 2005-80011361 | 20050408 |
| US 20070202354 | A1   | 20070830 | US 2006-547233   | 20061003 |
| IN 2006CN03792 | A    | 20070622 | IN 2006-CN3792   | 20061012 |
| KR 2007004843  | A    | 20070109 | KR 2006-7021357  | 20061013 |

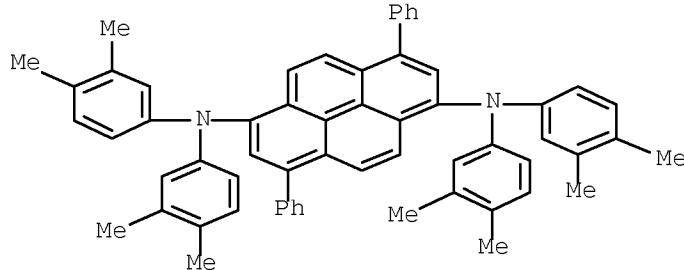
Abstract

The invention relates to an organic electroluminescent device comprising an electroluminescent layer sandwiched between a pair of electrodes, wherein the electroluminescent layer comprises C10-100 aryl amine and a condensed ring-containing substance represented by (Ar)<sub>1-L</sub> [Ar = C<sub>6</sub>-30 aromatic hydrocarbon and C<sub>3</sub>-30 aromatic heterocyclic; a = 2-6 integer; L = a valent condensed polycyclic aromatic residue].

Hit Structure

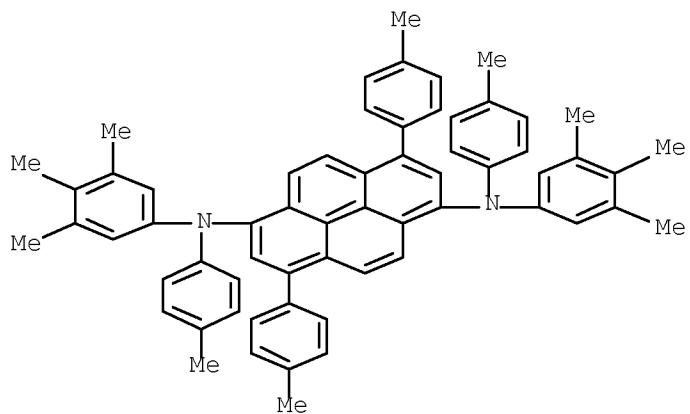
CAS Registry Number  
764657-27-4 CAPLUS

Chemical or Trade Name  
1,6-Pyrenediamine, N1,N1,N6,N6-tetrakis(3,4-dimethylphenyl)-3,8-diphenyl-  
(CA INDEX NAME)



CAS Registry Number  
868273-29-4 CAPLUS

Chemical or Trade Name  
1,6-Pyrenediamine, N1,N6,3,8-tetrakis(4-methylphenyl)-N1,N6-bis(3,4,5-trimethylphenyl)-  
(CA INDEX NAME)



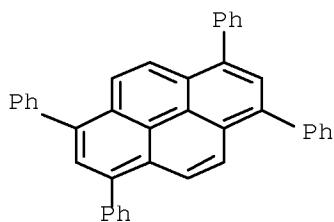
OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD  
(1 CITINGS)

Accession Number  
20051144923 CAPLUS [Full-text](#)Document Number  
144:29415Title  
Lateral organic light-emitting diode with field-effect transistor characteristicsAuthor/Inventor  
Oyamada, Takahito; Uchiuzou, Hiroyuki; Akiyama, Seiji; Oku, Yoshiaki; Shimoji, Noriyuki; Matsushige, Kazumi; Sasabe, Hiroyuki; Adachi, ChihayaPatent Assignee/Corporate Source  
Department of Photonics Materials Science, Chitose Institute of Science and Technology (CIST), 758-65 Bibi, Chitose, Hokkaido, 066-8655, JapanSource  
Journal of Applied Physics (2005), 98(7), 074506/1-074506/7 CODEN: JAPIAU; ISSN: 0021-8979Document Type  
JournalLanguage  
English

Abstract

Bright electroluminescence (EL) was observed from 1%-rubrene doped tetraphenylpyrene (TPPy) as an active layer in a lateral organic LED structure that allowed FET operation. This device configuration provides an organic LED structure where the anode (source) and cathode (drain) electrodes are laterally arranged, providing one a chance to control the EL intensity by changing the gate bias. TPPy provides compatible transistor and EL characteristics. Rubrene doping into the TPPy host and adjusting the source-drain channel length significantly improved the EL characteristics. A maximum EL quantum efficiency ( $\eta_{ext}$ ) of approx. 0.5% was observed with a Cr/Au source (S)-drain (D) electrode and a slightly higher  $\eta_{ext}$  of approx. 0.8% with S-D electrodes of MgAu/Au, Al/Au, Cr/YAu/Au, and MgAl/Au multilayers, aiming for simultaneous hole and electron injection.

Hit Structure

CAS Registry Number  
13638-82-9 CAPLUSChemical or Trade Name  
Pyrene, 1,3,6,8-tetraphenyl- (CA INDEX NAME)OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD  
(1 CITINGS)Accession Number  
2005104257 CAPLUS [Full-text](#)Document Number  
143:347290Title  
Preparation of polycyclic hydrocarbon organosilanes, process for production of the same, and use thereofAuthor/Inventor  
Nakagawa, Masatoshi; Hanato, Hiroyuki; Tamura, Toshihiro; Imada, HiroshiPatent Assignee/Corporate Source  
Sharp Kabushiki Kaisha, JapanSource  
PCT Int. Appl., 131 pp. CODEN: PIXXD2Document Type  
PatentLanguage  
Japanese

Patent Information

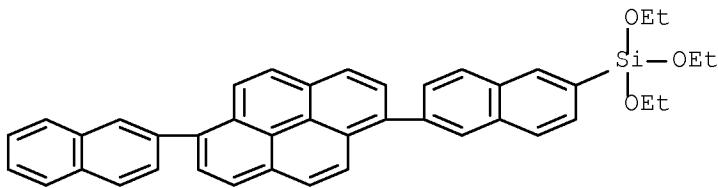
| PATENT NO.     | KIND | DATE     | APPLICATION NO.  | DATE     |
|----------------|------|----------|------------------|----------|
| WO 2005090365  | A1   | 20050929 | WO 2005-JP4658   | 20050316 |
| JP 2005263721  | A    | 20050929 | JP 2004-80333    | 20040319 |
| JP 2005268100  | A    | 20050929 | JP 2004-80375    | 20040319 |
| JP 4416546     | B2   | 20100217 |                  |          |
| JP 2006062964  | A    | 20060309 | JP 2004-243508   | 20040824 |
| JP 2005298485  | A    | 20051027 | JP 2005-67516    | 20050310 |
| CN 1950382     | A    | 20070418 | CN 2005-80014402 | 20050316 |
| JP 2005298496  | A    | 20051027 | JP 2005-79667    | 20050318 |
| JP 4612443     | B2   | 20110112 |                  |          |
| US 20080207864 | A1   | 20080828 | US 2008-593204   | 20080318 |

Abstract

Organosilanes represented by the general formula (T)<sub>k</sub>-SiX<sub>1</sub>X<sub>2</sub>X<sub>3</sub> [wherein T is an organic group derived from a fused polycyclic hydrocarbon constituted of two to ten 5- and/or 6-membered monocyclic hydrocarbons, e.g. Q, Q<sub>1</sub>, Q<sub>2</sub>, and Q<sub>3</sub> (wherein n<sub>1</sub> is an integer of 0 to 10; n<sub>2</sub> and n<sub>3</sub> are an integer of ≥0 and the sum of n<sub>2</sub> and n<sub>3</sub> is 1 to 9) k is an integer of 1 to 10; and at least one of X<sub>1</sub> to X<sub>3</sub> is a group capable of giving hydroxyl through hydrolysis or halogeno, and the others are each a group inert to the adjacent moles] are prepared. Organic thin films of organosilanes and organic thin film transistor and organic electroluminescent device fabricated from organic thin films using organosilanes are also disclosed. Thus, 6-bromo-2,2',6,2"-terphthalene was treated with Mg at 60° for 1 h in THF to give the Grignard reagent which was reacted with chlorotriethoxysilane at 60° for 2 h to give 40% 6-(triethoxysilyl)-2,2',6,2"-terphthalene (I). A 2 mM solution of 3-(diethylbutyl)(methoxy)silyl-9-(diphenylmethyl)pentacene (II) (preparation given) in CHCl<sub>3</sub> (100 μL) was added dropwise to water to form a monol. layer on the water surface which was transferred on a substrate to form a Langmuir-Blodgett film (LB) film (average thickness approx. 2.0 nm of monol. layer).

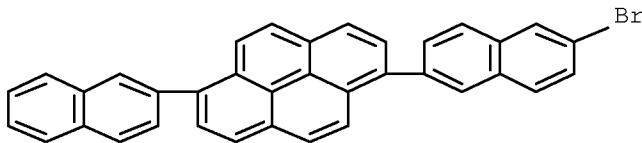
Hit Structure

CAS Registry Number  
865648-06-2 CAPLUSChemical or Trade Name  
Pyrene, 1-(2-naphthalenyl)-6-(6-(triethoxysilyl)-2-naphthalenyl)- (CA INDEX NAME)



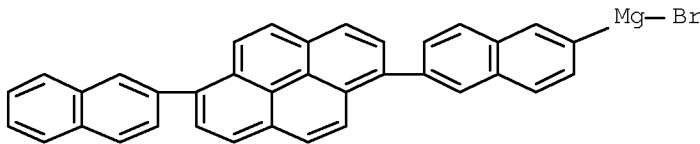
CAS Registry Number  
865648-04-0 CAPIUS

Chemical or Trade Name  
Pyrene, 1-(6-bromo-2-naphthalenyl)-6-(2-naphthalenyl)- (CA INDEX NAME)



CAS Registry Number  
865648-05-1 CAPIUS

Chemical or Trade Name  
Magnesium, bromo[6-[6-(2-naphthalenyl)-1-pyrenyl]-2-naphthalenyl]- (9CI)  
(CA INDEX NAME)



OS.CITING REF COUNT: 8 THERE ARE 8 CAPIUS RECORDS THAT CITE THIS RECORD  
(14 CITINGS)

L5 ANSWER 35 OF 59 CAPIUS COPYRIGHT 2011 ACS on STN

Accession Number  
2005962579 CAPIUS Full-text

Document Number  
143:256816

Title  
White organic electroluminescence device

Author/Inventor  
Tokairin, Hiroshi; Fukuoka, Kenichi; Kubota, Mineyuki; Funahashi, Masakazu  
Patent Assignee/Corporate Source  
Idemitsu Kosan Co., Ltd., Japan

Source  
PCT Int. Appl., 63 pp. CODEN: PIXD2

Document Type  
Patent

Language  
Japanese

Patent Information

| PATENT NO.     | KIND | DATE     | APPLICATION NO.  | DATE     |
|----------------|------|----------|------------------|----------|
| WO 2005081587  | A1   | 20050901 | WO 2005-JP2442   | 20050217 |
| EP 1718124     | A1   | 20061102 | EP 2005-719244   | 20050217 |
| CN 1879454     | A    | 20061213 | CN 2005-80001270 | 20050217 |
| US 20070063638 | A1   | 20070322 | US 2006-573661   | 20060328 |
| KR 2006115372  | A    | 20061108 | KR 2006-7008168  | 20060427 |

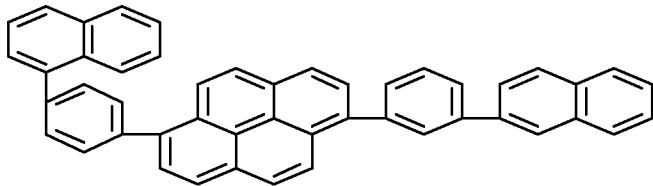
Abstract

The invention refers to a white organic electroluminescence device comprising a neg. electrode and a pos. electrode and, interposed there between, one or more organic thin film layers including at least a light emitting layer, wherein the light emitting layer is constituted of a laminate of blue color light emitting layer and yellow-to-red color light emitting layer and contains an asym. condensed-ring-containing compound. This white color organic electroluminescence device realizes reduced chromaticity changes and excels in luminous efficiency and thermal stability, ensuring strikingly prolonged service life.

Hit Structure

CAS Registry Number  
863292-28-8 CAPIUS

Chemical or Trade Name  
Pyrene, 1-[3-(2-naphthalenyl)phenyl]-6-[4-(1-naphthalenyl)phenyl]- (CA INDEX NAME)



OS.CITING REF COUNT: 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD  
(7 CITINGS)

L5 ANSWER 36 OF 59 CAPLUS COPYRIGHT 2011 ACS on STN

Accession Number

2005656260 CAPLUS [Full-text](#)

Document Number

143:275223

Title

Tetra-substituted pyrenes: new class of blue emitter for organic light-emitting diodes

Author/Inventor

Sotoyama, Wataru; Sato, Hiroyuki; Kinoshita, Masaru; Takahashi, Toshiro; Matsuura, Azuma; Kodama, Jun; Sawatari, Norio; Inoue, Hiroshi

Patent Assignee/Corporate Source

Functional Organic Materials Laboratory, Fujitsu Laboratories Limited, Morinosato-Wakamiya, Atsugi, 243-0197, Japan

Source

Digest of Technical Papers - Society for Information Display International Symposium (2003), 34, 1294-1297 CODEN: DTPSDS

Document Type

Journal; (computer optical disk)

Language

English

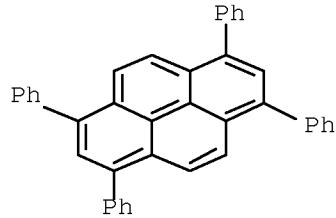
Abstract

We have developed a new class of highly-fluorescent blue emitter for organic light-emitting diodes (OLEDs) consisting of tetra-substituted pyrenes. From the anal. of the excited state diagrams of pyrene and its derivs. by MO calcns., we found that the new tetra-substituted pyrenes are highly fluorescent. OLEDs fabricated using the synthesized tetra-substituted pyrenes as emitters showed high efficiency and good color purity.

Hit Structure

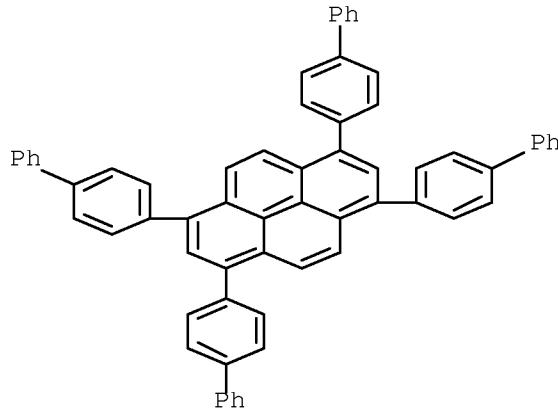
CAS Registry Number  
13638-82-9 CAPLUS

Chemical or Trade Name  
Pyrene, 1,3,6,8-tetraphenyl- (CA INDEX NAME)



CAS Registry Number  
790273-07-3 CAPLUS

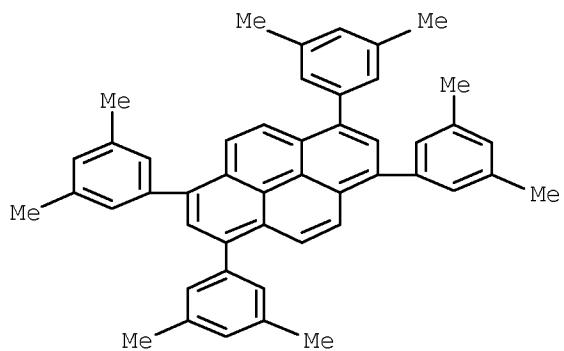
Chemical or Trade Name  
Pyrene, 1,3,6,8-tetrakis([1,1'-biphenyl]-4-yl)- (CA INDEX NAME)



CAS Registry Number

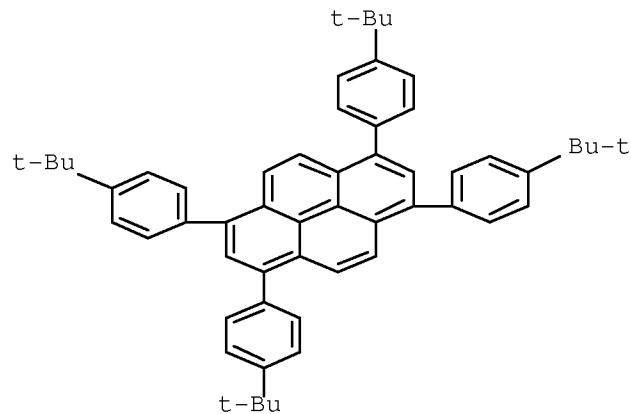
863639-30-9 CAPLUS

Chemical or Trade Name  
Pyrene, 1,3,6,8-tetrakis(3,5-dimethylphenyl)- (CA INDEX NAME)



CAS Registry Number  
863639-31-0 CAPLUS

Chemical or Trade Name  
Pyrene, 1,3,6,8-tetrakis[4-(1,1-dimethylethyl)phenyl]- (CA INDEX NAME)



OS CITING REF COUNT: 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD  
(3 CITINGS)

Accession Number

2005336613 CAPLUS [Full-text](#)

Document Number

144:13629

Title

High-performance blue OLEDs based on a sterically hindered pyrene host material

Author/Inventor

Yeh, Chia-Chun; Lee, Meng-Ting; Chen, Hsian-Hung; Chen, Chin H.

Patent Assignee/Corporate Source

Department of Applied Chemistry, National Chiao Tung University, Hsinchu, Taiwan, 300, Taiwan

Source

Digest of Technical Papers - Society for Information Display International Symposium (2004), 35, 788-791 CODEN: DTPSDS

Document Type

Journal; (computer optical disk)

Language

English

Abstract

The authors developed a blue organic light-emitting device (OLED) emitter based on a sterically hindered fluorescent host material of tetra(o-tolyl)pyrene (TOTP) which effectively suppresses the excimer emission of its electroluminescence. Doped with DSA-Ph of matching LUMO/HOMO, TOTP was used to produce a blue device with luminance efficiency of 8.64 cd/A at 20 mA/cm<sup>2</sup> and 7.1 V with a CIE<sub>x,y</sub> color coordinate of [0.15, 0.28].

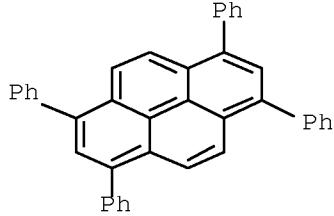
The properties of selected 1,3,6,8-tetra(aryl)pyrenes were measured and compared with conventional anthracene-based materials.

Hit Structure

CAS Registry Number

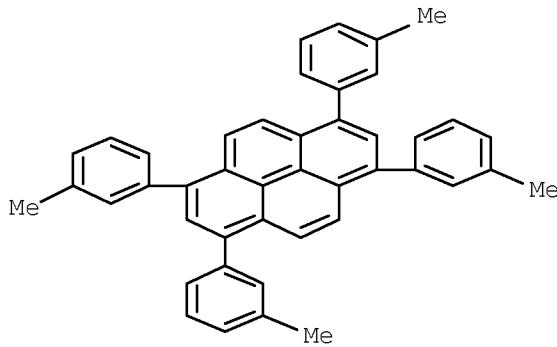
13638-92-9 CAPLUS

Chemical or Trade Name  
Pyrene, 1,3,6,8-tetraphenyl- (CA INDEX NAME)



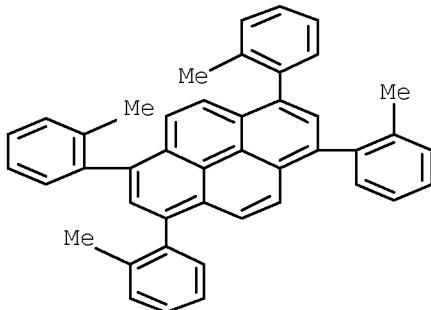
CAS Registry Number  
870133-71-4 CAPLUS

Chemical or Trade Name  
Pyrene, 1,3,6,8-tetrakis(3-methylphenyl)- (CA INDEX NAME)



CAS Registry Number  
870133-72-5 CAPLUS

Chemical or Trade Name  
Pyrene, 1,3,6,8-tetrakis(2-methylphenyl)- (CA INDEX NAME)



OS.CITING REF COUNT: 13 THERE ARE 13 CAPLUS RECORDS THAT CITE THIS RECORD (13 CITINGS)

L5 ANSWER 38 OF 59 CAPLUS COPYRIGHT 2011 ACS on STN

Accession Number

2005325561 CAPLUS [Full-text](#)

Document Number

142:381949

Title

Pyrene derivative, light emitting element, and light emitting device

Author/Inventor

Nomura, Ryoji; Takasu, Takako; Abe, Hiroko; Tokuda, Atsushi

Patent Assignee/Corporate Source

Semiconductor Energy Laboratory Co., Ltd., Japan

Source

U.S. Pat. Appl. Publ., 22 pp. CODEN: USXXCO

Document Type

Patent

Language

English

Patent Information

| PATENT NO.     | KIND | DATE     | APPLICATION NO. | DATE     |
|----------------|------|----------|-----------------|----------|
| US 20050079385 | A1   | 20050414 | US 2004-954341  | 20041001 |
| US 7232619     | B2   | 20070619 |                 |          |
| JP 2005126431  | A    | 20050519 | JP 2004-289684  | 20041001 |

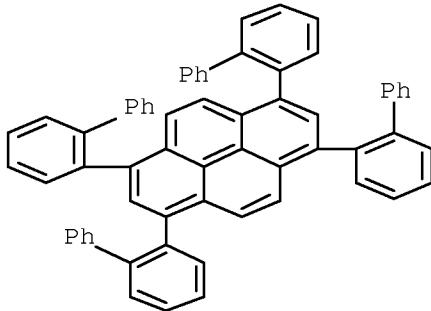
Abstract

It is an object of the present invention to provide a pyrene derivative that is unlikely to crystallize and is superior in quality in the case of forming a film. It is an object of the present invention to provide a light-emitting element from which stable light emission can be obtained for a long stretch of time by using the pyrene derivative [R1-4 = C1-6 alkyl, alkoxy, aryl, diarylamino or silyl with one or more alkyl or aryl groups]. By using vacuum deposition to deposit this material, a light-emitting element from which stable light emission can be obtained efficiently for a long stretch of time can be obtained.

Hit Structure

CAS Registry Number  
723265-24-3 CAPLUS

Chemical or Trade Name  
Pyrene, 1,3,6,8-tetrakis([1,1'-biphenyl]-2-yl)- (CA INDEX NAME)



OS.CITING REF COUNT: 5 THERE ARE 5 CAPLUS RECORDS THAT CITE THIS RECORD (8 CITINGS)

L5 ANSWER 39 OF 59 CAPLUS COPYRIGHT 2011 ACS on STN

Accession Number

2005292353 CAPLUS [Full-text](#)

Document Number

143:16108

Title

White organic light-emitting diode comprising of blue fluorescence and red phosphorescence

Author/Inventor

Qin, Dashan; Tao, Ye

Patent Assignee/Corporate Source

National Research Council of Canada, Institute for Microstructural Sciences, Ottawa, ON, K1A 0R6, Can.

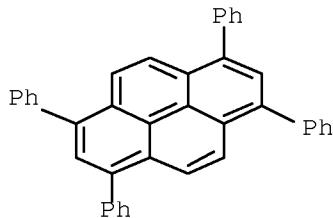
Source

Abstract  
A white organic light-emitting diode with the structure of ITO/NPB 30 nm/TCTA+2% TPP 20 nm/BCP+0.4% Ir(pic)320 nm/Alq3 40 nm/Mg:Ag was fabricated and characterized, where 2,5,7,10-tetraphenylpyrene and tris(1-phenylisoquinoline) Ir (III) [Ir(pic)3] were used as a blue fluorescent dye and a red phosphorescent dye resp. The I-V characteristics of the device showed a turn-on voltage of 2.6 V. The electroluminescent spectra of the device consisted of blue fluorescent and red phosphorescent emissions. The intensity of the blue emission increased gradually relative to the red emission with increasing voltage. The emissions of the device were in the white-light region between 10 and 15 V. A maximum white light luminance of 1076 cd/m<sup>2</sup> with CIE coordinates of (x, y = 0.27, 0.24) was reached at 15 V with an efficiency of 1.35 cd/A. The white light emission is related to the simultaneous exciton formation on both sides of the TCTA/BCP interface.

Hit Structure

CAS Registry Number  
13638-82-9 CAPLUS

Chemical or Trade Name  
Pyrene, 1,3,6,8-tetraphenyl- (CA INDEX NAME)



OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD  
(1 CITINGS)

L5 ANSWER 40 OF 59 CAPLUS COPYRIGHT 2011 ACS on STN

Accession Number  
2005212654 CAPLUS Full-text

Document Number  
142:287607

Title  
Organic electroluminescent devices showing high luminescence efficiency and good durability

Author/Inventor  
Arai, Kazumi; Igarashi, Tatsuya; Mishima, Masayuki

Patent Assignee/Corporate Source  
Fuji Photo Film Co., Ltd., Japan

Source  
Jpn. Kokai Tokkyo Koho, 46 pp. CODEN: JKXXAF

Document Type  
Patent

Language  
Japanese

Patent Information

| PATENT NO.    | KIND | DATE     | APPLICATION NO. | DATE     |
|---------------|------|----------|-----------------|----------|
| JP 2005063938 | A    | 20050310 | JP 2004-72452   | 20040315 |

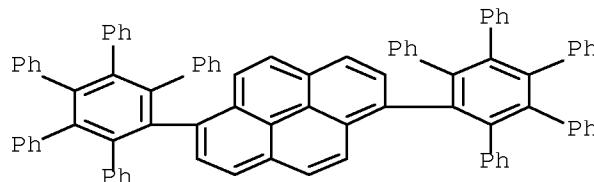
Abstract

The devices have emitter layers containing first metal complex hosts having  $T_g \geq 140^\circ$ , second condensed aromatic compd hosts having decomposition starting temperature  $\geq 330^\circ$ , and luminescent materials. Thus, an organic device used an emitter layer containing tris(8-hydroxyquinolinato)aluminum, 1,3,5-tri(3-pyrenyl)benzene, and red-emitting styryl compound I.

Hit Structure

CAS Registry Number  
847142-52-3 CAPLUS

Chemical or Trade Name  
Pyrene, 1,6-bis(4',5',6'-triphenyl[1,1':2',1'''-terphenyl]-3'-yl)- (9CI)  
(CA INDEX NAME)



Accession Number  
2005131766 CAPLUS [Full-text](#)

Document Number  
142:400200

Title  
Increased electrophosphorescent efficiency in organic light emitting diodes by using an exciton-collecting structure

Author/Inventor

Qin, Dashan; Tao, Ye

Patent Assignee/Corporate Source  
National Research Council of Canada, Institute for Microstructural Sciences, Ottawa, ON, K1A 0R6, Can.

Source  
Journal of Applied Physics (2005), 97(4), 044505/1-044505/4 CODEN: JAPIAU; ISSN: 0021-8979

Document Type  
Journal

Language

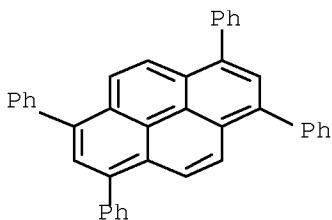
English

Abstract  
A phosphorescent dye, tris(1-phenylisoquinoline) Ir (III) [Ir(piq)3] doped interface of 4,4',4''-tris(carbazol-9-yl)-triphenylamine (TCTA) and 2,9-dimethyl-4,7-diphenyl-1,10-phenanthroline (BCP) was studied in organic light emitting diodes. Two devices with different emissive interfaces, TCTA+6% Ir(piq)3/BCP and TCTA+6% Ir(piq)3/BCP+1% Ir(piq)3, exhibited nearly the same red Ir(piq)3 emissions and I-V characteristics. However, the 2nd device showed higher efficiency and luminance than the 1st device over the whole voltage range. The maximum efficiency of 6.0 cd/A reached at 0.026 mA/cm2 in the 2nd device was 30% higher than that of 4.6 cd/A reached at 0.032 mA/cm2 in the 1st device. The improved performance of the 2nd device is attributed to the fact that the excitons can be formed on both sides of the TCTA/BCP interface and can be more efficiently collected with the addnl. 1% Ir(piq)3 doped in the BCP layer. Therefore, the exciton-collecting structure, doping phosphorescent dyes into both sides of the TCTA/BCP interface, is believed to be a very useful way to optimize the performance of phosphorescent organic light emitting diodes.

Hit Structure

CAS Registry Number  
13638-82-9 CAPLUS

Chemical or Trade Name  
Pyrene, 1,3,6,8-tetraphenyl- (CA INDEX NAME)



Accession Number  
200575901 CAPLUS [Full-text](#)

Document Number  
142:186928

Title  
Organic electroluminescent (EL) devices with improved electron-injection efficiency and full-color flat displays using them

Author/Inventor

Nakayama, Masaya; Kinoshita, Shoji; Kodama, Atsushi

Patent Assignee/Corporate Source  
Fujitsu Ltd., Japan

Source  
Jpn. Kokai Tokkyo Koho, 20 pp. CODEN: JKXXAF

Document Type

Patent

Language

Japanese

Patent Information

| PATENT NO.    | KIND | DATE     | APPLICATION NO. | DATE     |
|---------------|------|----------|-----------------|----------|
| JP 2005026210 | A    | 20050127 | JP 2004-85516   | 20040323 |

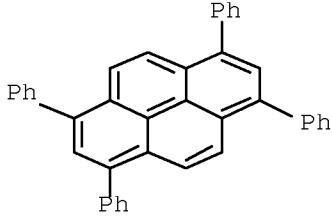
Abstract

The devices have hole-transporting layers, light-emitting layers, and electron-transporting layers in this order between anodes and cathodes, satisfying that  $[\text{Ea(eml)} - \text{Ea(htl)}] \geq 0.15 \text{ eV}$  and  $[\text{Ea(eml)} - \text{Ea(eml)}] \leq 0.15 \text{ eV}$ .  $\text{Ea(eml)} - \text{Ea(htl)}$ ,  $\text{Ea(eml)}$  = electron affinity of light-emitting layer, hole-transporting layer, and electron-transporting layer, resp.]. The displays, using the devices as blue-emitting sources, show improved brightness.

Hit Structure

CAS Registry Number  
13638-82-9 CAPLUS

Chemical or Trade Name  
Pyrene, 1,3,6,8-tetraphenyl- (CA INDEX NAME)



Accession Number  
20041035604 CAPLUS [Full-text](#)

Document Number  
142:29757

Title  
Dibenzospiro compounds, their organic solutions for manufacture of luminescent films, and blue-emitting organic electroluminescent devices using them

Author/Inventor  
Inoue, Tetsuya; Ikeda, Shuji; Hosokawa, Chishio

Patent Assignee/Corporate Source  
Idemitsu Kosan Co., Ltd., Japan

Source  
Jpn. Kokai Tokkyo Koho, 49 pp. CODEN: JKXXAF

Document Type  
Patent

Language  
Japanese

Patent Information

| PATENT NO.     | KIND | DATE     | APPLICATION NO.  | DATE     |
|----------------|------|----------|------------------|----------|
| JP 2004339136  | A    | 20041202 | JP 2003-136838   | 20030515 |
| WO 2004110968  | A1   | 20041223 | WO 2004-JP6331   | 20040430 |
| EP 1623968     | A1   | 20060208 | EP 2004-730688   | 20040430 |
| CN 1791567     | A    | 20060621 | CN 2004-80013354 | 20040430 |
| US 20070042220 | A1   | 20070222 | US 2005-556530   | 20051114 |

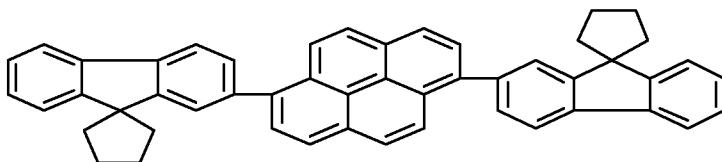
Abstract

The compds. are  $(Sp)nXYm$  [Sp = dibenzospiro groups I; L = single bond,  $(CR'R'')e$ , O, CO, NR'; R, R'' = H, 6-50-membered aromatic group, 5-50-membered aromatic heterocyclylene, C1-50 alkyl; Z = C, Si, Ge; Q = groups necessary for forming cyclic structure; R = 6-50-membered aromatic group, 5-50-membered aromatic heterocyclyl, C1-50 alkyl, etc.; X = 6-50-membered aromatic group, 12-20-membered condensed aromatic group, 5-50-membered aromatic heterocyclylene other than (poly)anthracenediyl; Y = (vinyl linkage-containing) 6-50-membered aromatic group; a, b = 0-4; e = 1-10; m = 0-2; n = 1-4]. The compds. show good heat resistance and organic solvent solubility. Thus, di(spiroindanefluorenyl)benzene II was manufactured and used for a blue-emitting organic electroluminescent device.

Hit Structure

CAS Registry Number  
799560-33-1 CAPLUS

Chemical or Trade Name  
Spiro[cyclopentane-1,9'-[9H]fluorene], 2',2'''-(1,6-pyrenediyl)bis- (CA  
INDEX NAME)



OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD  
(4 CITINGS)

L5 ANSWER 44 OF 59 CAPLUS COPYRIGHT 2011 ACS on STN

Accession Number  
20041035145 CAPLUS [Full-text](#)

Document Number  
142:13489

Title  
White-emitting organic electroluminescent devices employing a light-emitting materials containing substituted pyrene structural units

Author/Inventor  
Sakamoto, Yukinari; Ichimura, Mari; Kashiwabara, Mitsuhiro; Tamura, Shinichiro

Patent Assignee/Corporate Source  
Sony Corporation, Japan

Source  
Eur. Pat. Appl., 20 pp. CODEN: EPXXDW

Document Type  
Patent

Language  
English

Patent Information

| PATENT NO.     | KIND | DATE     | APPLICATION NO.  | DATE     |
|----------------|------|----------|------------------|----------|
| EP 1482573     | A2   | 20041201 | EP 2004-12472    | 20040526 |
| EP 1482573     | A3   | 20070725 |                  |          |
| TW 281362      | B    | 20070511 | TW 2004-115125   | 20040527 |
| KR 2004103439  | A    | 20041208 | KR 2004-38477    | 20040528 |
| JP 2005011806  | A    | 20050113 | JP 2004-159060   | 20040528 |
| JP 4529547     | B2   | 20100825 |                  |          |
| US 20070152566 | A1   | 20070705 | US 2004-856043   | 20040528 |
| US 7244516     | B2   | 20070717 |                  |          |
| CN 1575067     | A    | 20050202 | CN 2004-10076617 | 20040531 |
| CN 100533811   | C    | 20090826 |                  |          |

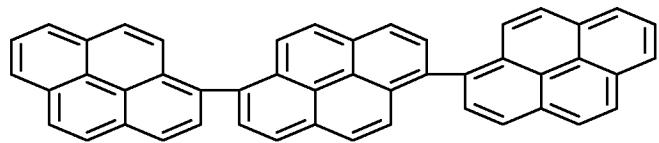
Abstract

Organic electroluminescent devices are described which comprise an organic layer having a light-emission region and being disposed between an anode and a cathode; where the organic layer contains, as an organic light-emitting material, a compound represented by formula (I) where each of R1-26 represents a substituent selected from the group consisting of a hydrogen atom, a halogen atom, a hydroxy group, a mercapto group, a nitro group, an amino group, a cyano group, an alkyl group, an alkenyl group, a cycloalkyl group, an alkoxy group, an alkylthio group, a silyl group, an alkyl silyl group, a siloxanyl group, an aralkyl group, an aromatic hydrocarbon group, an aromatic heterocyclic group, an ester group, an aryloxy group, a formyl group, an alkoxy carbonyl group, and a carboxyl group, and n is a numeric value from 1 to 3.

Hit Structure

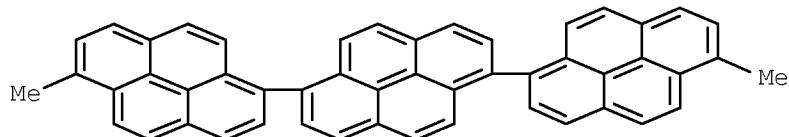
CAS Registry Number  
797057-73-9 CAPLUS

Chemical or Trade Name  
1,1':6',1'''-Terpyrene (9CI) (CA INDEX NAME)



CAS Registry Number  
797057-74-0 CAPLUS

Chemical or Trade Name  
1,1':6',1'''-Terpyrene, 6,6'''-dimethyl- (9CI) (CA INDEX NAME)



OS.CITING REF COUNT: 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD  
(2 CITINGS)

Accession Number

2004965354 CAPLUS [Full-text](#)

Document Number

141403312

Title

1,3,6,8-Tetrasubstituted pyrene compounds, organic electroluminescent device and organic electroluminescent display

Author/Inventor

Sotoyama, Wataru; Sato, Hiroyuki; Matsuura, Azuma; Kinoshita, Masaru; Takahashi, Toshiro

Patent Assignee/Corporate Source

Fujitsu Limited, Japan

Source

PCT Int. Appl., 67 pp. CODEN: PIXXD2

Document Type

Patent

Language

Japanese

Patent Information

| PATENT NO.     | KIND | DATE     | APPLICATION NO. | DATE     |
|----------------|------|----------|-----------------|----------|
| WO 2004096945  | A1   | 20041111 | WO 2003-JP5577  | 20030501 |
| EP 1621597     | A1   | 20060201 | EP 2003-721011  | 20030501 |
| US 20050238920 | A1   | 20051027 | US 2005-166692  | 20050627 |

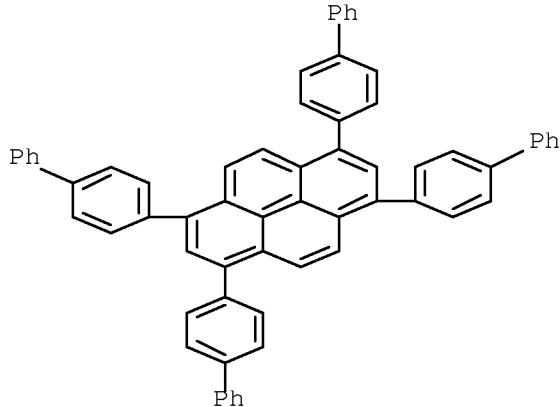
Abstract

The invention refers to an organic electroluminescent device containing, as a luminescent material, a 1,3,6,8-tetrasubstituted pyrene compound wherein the substituents are Ph rings with at least one substituted aryl as a substituent.

Hit Structure

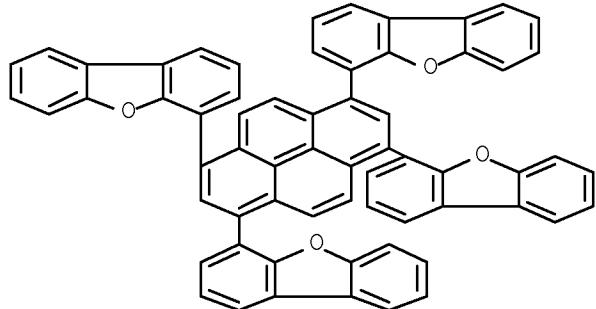
CAS Registry Number  
790273-07-3 CAPLUS

Chemical or Trade Name  
Pyrene, 1,3,6,8-tetrakis([1,1'-biphenyl]-4-yl)- (CA INDEX NAME)



CAS Registry Number  
790273-08-4 CAPLUS

Chemical or Trade Name  
Dibenzofuran, 4,4',4'',4'''-(1,3,6,8-pyrenetetrayl)tetrakis- (9CI) (CA INDEX NAME)



OS.CITING REF COUNT: 9 THERE ARE 9 CAPLUS RECORDS THAT CITE THIS RECORD  
(18 CITINGS)

Accession Number  
2004965198 CAPLUS [Full-text](#)

Document Number  
141403311

Title  
1,3,6,8-Tetrasubstituted pyrene compounds, organic electroluminescent device and organic electroluminescent display

Author/Inventor  
Sotoyama, Wataru

Patent Assignee/Corporate Source  
Fujitsu Limited, Japan

Source  
PCT Int. Appl., 45 pp. CODEN: PIXXD2

Document Type  
Patent

Language  
Japanese

Patent Information

| PATENT NO.     | KIND | DATE     | APPLICATION NO. | DATE     |
|----------------|------|----------|-----------------|----------|
| WO 2004096743  | A1   | 20041111 | WO 2003-JP5417  | 20030428 |
| EP 1619177     | A1   | 20060125 | EP 2003-728002  | 20030428 |
| EP 1619177     | B1   | 20080227 |                 |          |
| JP 4192152     | B2   | 20081203 | JP 2004-571293  | 20030428 |
| US 20050156164 | A1   | 20050721 | US 2005-74899   | 20050309 |
| US 7571894     | B2   | 20090811 |                 |          |

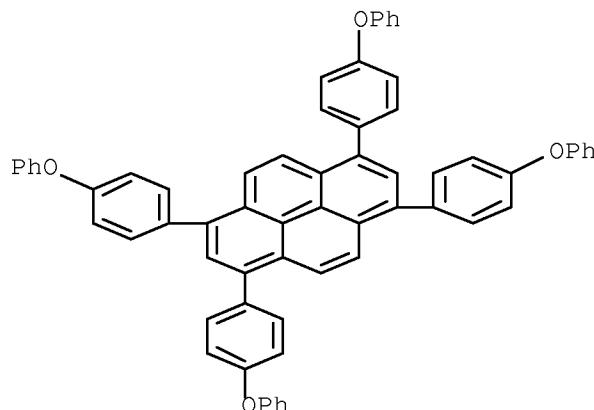
Abstract

The invention refers to an organic electroluminescent device containing, as a luminescent material, a 1,3,6,8-tetrasubstituted pyrene compound wherein the substituents are Ph rings containing at least one of the following as a substituent: -NR6R7, -SiR8R9R10, -SR11, or -OR12 [R6-12 = H or substituent].

Hit Structure

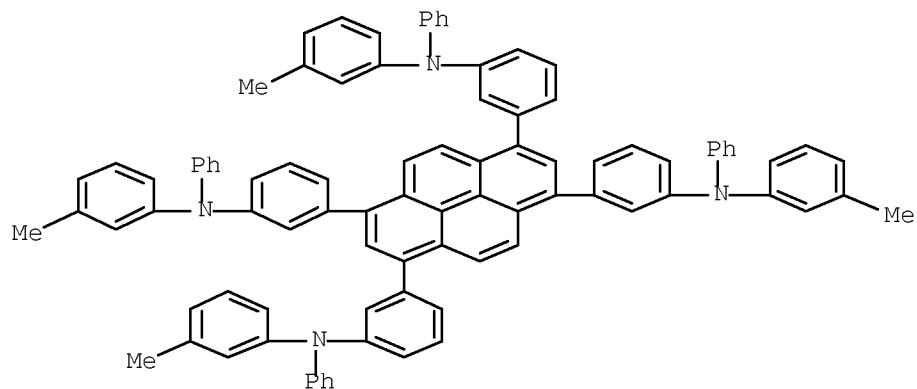
CAS Registry Number  
790721-24-3 CAPLUS

Chemical or Trade Name  
Pyrene, 1,3,6,8-tetrakis(4-phenoxyphenyl)- (CA INDEX NAME)



CAS Registry Number  
790721-25-4 CAPLUS

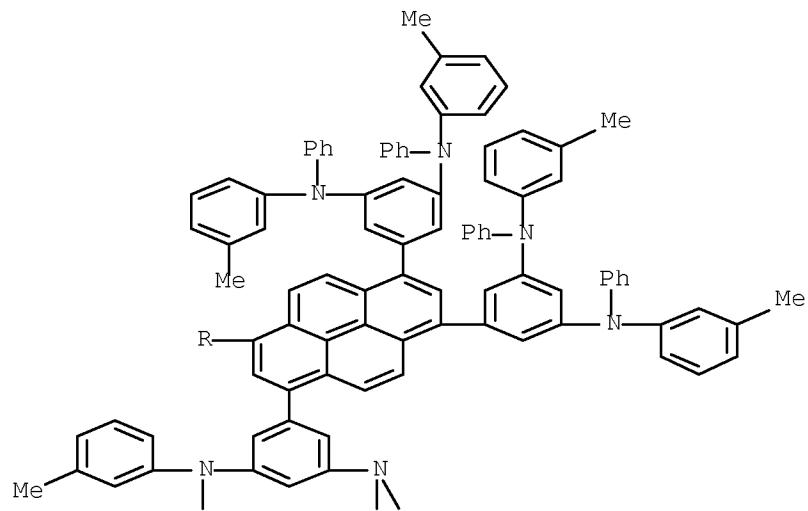
Chemical or Trade Name  
Benzanamine, 3,3',3'',3'''-(1,3,6,8-pyrenetetrayl)tetrakis[N-(3-methylphenyl)-N-phenyl- (CA INDEX NAME)

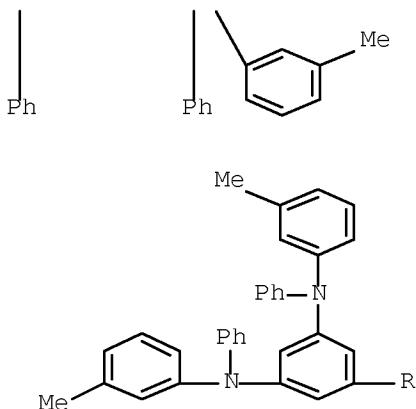


CAS Registry Number  
790721-26-5 CAPLUS

Chemical or Trade Name  
1,3-Benzenediamine, 5,5',5'',5'''-(1,3,6,8-pyrenetetrayl)tetraakis[N,N'-bis(3-methylphenyl)-N'-diphenyl- (9CI) (CA INDEX NAME)

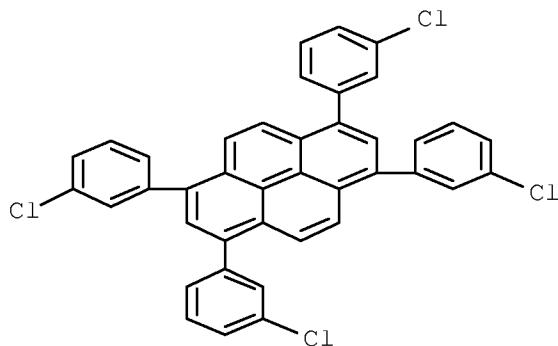
PAGE 1-A





CAS Registry Number  
790721-27-6 CAPLUS

Chemical or Trade Name  
Pyrene, 1,3,6,8-tetrakis(3-chlorophenyl)- (CA INDEX NAME)



OS.CITING REF COUNT: 4 THERE ARE 4 CAPLUS RECORDS THAT CITE THIS RECORD  
(9 CITINGS)

L5 ANSWER 47 OF 59 CAPLUS COPYRIGHT 2011 ACS on STN

Accession Number  
2004799549 CAPLUS [Full-text](#)

Document Number  
141304000

Title  
Process for preparation of 1,6-bis(diphenylamino)pyrene derivatives as electroluminescent devices

Author/Inventor  
Funahashi, Masakazu

Patent Assignee/Corporate Source  
Idemitsu Kosan Co. Ltd., Japan

Source  
PCT Int. Appl., 51 pp. CODEN: PIXD2

Document Type  
Patent

Language  
Japanese

Patent Information

| PATENT NO.     | KIND | DATE     | APPLICATION NO.  | DATE     |
|----------------|------|----------|------------------|----------|
| WO 2004083162  | A1   | 20040930 | WO 2004-JP2945   | 20040308 |
| EP 1604974     | A1   | 20051214 | EP 2004-718430   | 20040308 |
| CN 1784376     | A    | 20060607 | CN 2004-80012602 | 20040308 |
| CN 101343234   | A    | 20090114 | CN 2008-10099080 | 20040308 |
| JP 4267623     | B2   | 20090527 | JP 2005-503649   | 20040308 |
| IN 2005CN02302 | A    | 20070406 | IN 2005-CN2302   | 20050919 |
| IN 229393      | A1   | 20090320 |                  |          |
| US 20070009758 | A1   | 20070111 | US 2005-549801   | 20051121 |

IN 2008CN01626 A 20090109 IN 2008-CN1626 20080401

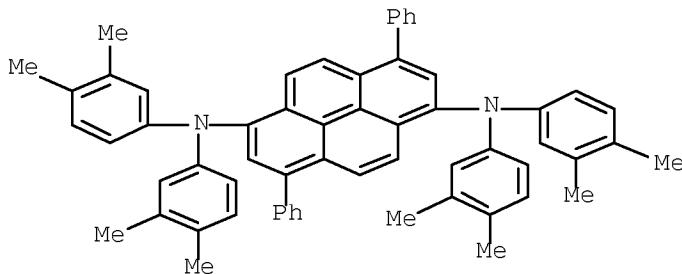
Abstract

This invention pertains to a method for producing (diphenylamino)pyrene derivs. I [wherein R = H, (un)substituted alkyl, aryl, aralkyl, etc.; R' = (un)substituted diphenylamino; q = 1-9; p = 1-9; with limitation of p + q < 10], which are useful as electroluminescent devices. For example, 1,6-dibromopyrene was reacted with 4-isopropylidiphenylamine in toluene in the presence of Pd(OAc)<sub>2</sub>, t-Bu<sub>3</sub>P, and t-BuONa to give 1,6-bis(4-isopropylidiphenylamino)pyrene. I were tested as organic electroluminescent devices which have a long life and emit a blue color at a high luminescence efficiency.

Hit Structure

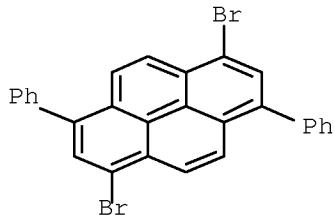
CAS Registry Number  
764657-27-4 CAPIUS

Chemical or Trade Name  
1,6-Fyrenediamine, N1,N1,N6,N6-tetrakis(3,4-dimethylphenyl)-3,8-diphenyl-  
(CA INDEX NAME)



CAS Registry Number  
764657-28-5 CAPIUS

Chemical or Trade Name  
Fyrene, 1,6-dibromo-3,8-diphenyl- (CA INDEX NAME)



OS.CITING REF COUNT: 1 THERE ARE 1 CAPIUS RECORDS THAT CITE THIS RECORD  
(4 CITINGS)

,L5 ANSWER 48 OF 59 CAPIUS COPYRIGHT 2011 ACS on STN

Accession Number  
2004756795 CAPIUS Edit text

Document Number  
141:285537

Title  
Organic electroluminescent device employing a derivative of 9,10-diaminoanthracene as a green luminescent dopant

Author/Inventor  
Seo, Jeong Dae; Kim, Hee Jung; Lee, Kyung Hoon; Oh, Hyoung Yun; Kim, Myung Seop; Park, Chun Gun

Patent Assignee/Corporate Source  
LG Electronics Inc., S. Korea

Source  
PCT Int. Appl., 35 pp. CODEN: PIXXD2

Document Type  
Patent

Language  
English

Patent Information

| PATENT NO.     | KIND | DATE     | APPLICATION NO.  | DATE     |
|----------------|------|----------|------------------|----------|
| WO 2004078872  | A2   | 20040916 | WO 2004-KR472    | 20040305 |
| WO 2004078872  | A3   | 20041216 |                  |          |
| KR 2004079803  | A    | 20040916 | KR 2003-20468    | 20030401 |
| US 20040209118 | A1   | 20041021 | US 2004-792130   | 20040304 |
| US 7651788     | B2   | 20100126 |                  |          |
| EP 1603990     | A2   | 20051214 | EP 2004-717900   | 20040305 |
| CN 1771313     | A    | 20060510 | CN 2004-80009251 | 20040305 |
| JP 2006519477  | T    | 20060824 | JP 2006-500655   | 20040305 |
| JP 4129990     | B2   | 20080806 |                  |          |
| JP 2008172229  | A    | 20080724 | JP 2008-48       | 20080104 |

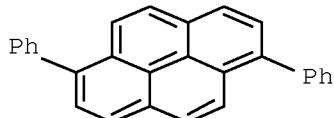
Abstract

Organic electroluminescent devices (OLEDs) are described which comprise a substrate; a first and second electrodes formed on the substrate; and a light-emitting layer formed between the first electrode and the second electrode, with the light-emitting layer having a plurality of materials and being a green luminescent material using a dopant with chemical formula I where at least one of A1 and A2 is selected from a substituted or non-substituted aromatic group, a heterocyclic group, an aliphatic group and hydrogen. The materials forming the light-emitting layer together with the material of chemical formula (I) may have the formula B1-X-B2 where X is selected from naphthalene, fluorine, anthracene, phenanthrene, pyrene, perylene, quinoline, and isoquinoline; and at least one of B1 and B2 is selected from aryl, alkylaryl, alkoxyaryl, arylaminoaryl, alkylamino, and arylallyl.

Hit Structure

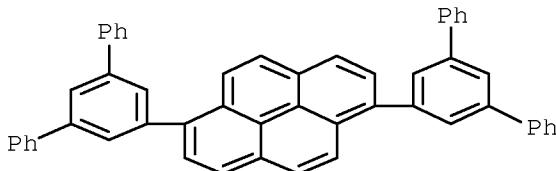
CAS Registry Number  
55009-75-1 CAPIUS

Chemical or Trade Name  
Pyrene, 1,6-diphenyl- (CA INDEX NAME)



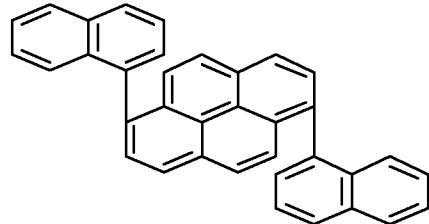
CAS Registry Number  
722498-68-2 CAPIUS

Chemical or Trade Name  
Pyrene, 1,6-bis([1,1':3',1''-terphenyl]-5'-yl)- (9CI) (CA INDEX NAME)



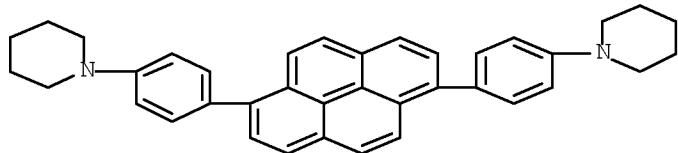
CAS Registry Number  
722498-69-3 CAPIUS

Chemical or Trade Name  
Pyrene, 1,6-di-1-naphthalenyl- (CA INDEX NAME)



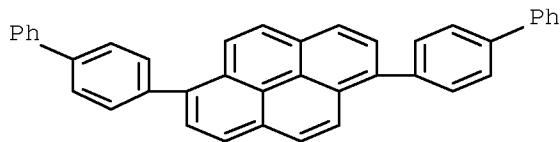
CAS Registry Number  
722498-70-6 CAPIUS

Chemical or Trade Name  
Piperidine, 1,1'-(1,6-pyrenediylid-4,1-phenylene)bis- (9CI) (CA INDEX NAME)



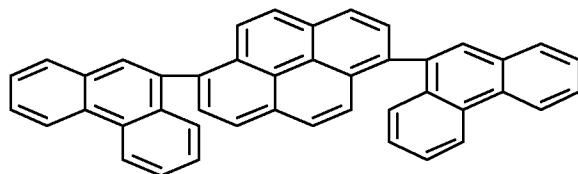
CAS Registry Number  
722498-71-7 CAPIUS

Chemical or Trade Name  
Pyrene, 1,6-bis([1,1'-biphenyl]-4-yl)- (CA INDEX NAME)



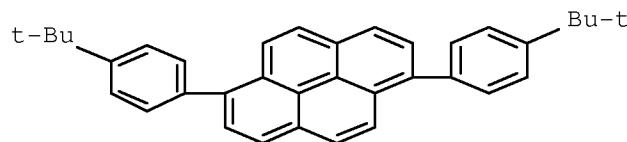
CAS Registry Number  
722498-72-8 CAPIUS

Chemical or Trade Name  
Pyrene, 1,6-di-9-phenanthrenyl- (CA INDEX NAME)



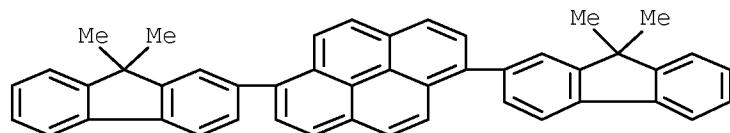
CAS Registry Number  
722498-73-9 CAPIUS

Chemical or Trade Name  
Pyrene, 1,6-bis[4-(1,1-dimethylethyl)phenyl]- (CA INDEX NAME)



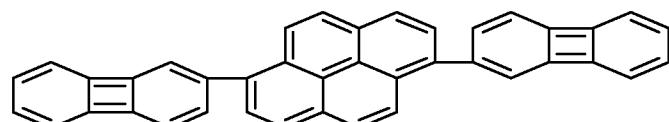
CAS Registry Number  
722498-74-0 CAPIUS

Chemical or Trade Name  
Pyrene, 1,6-bis(9,9-dimethyl-9H-fluoren-2-yl)- (CA INDEX NAME)



CAS Registry Number  
722498-75-1 CAPIUS

Chemical or Trade Name  
Pyrene, 1,6-di-2-biphenylenyl- (CA INDEX NAME)



OS.CITING REF COUNT:

4

THERE ARE 4 CAPIUS RECORDS THAT CITE THIS RECORD  
(4 CITINGS)

Accession Number

2004369984 CAPLUS [Full-text](#)

Document Number

141:131054

Title

Organic electroluminescent elements and spirobifluorene derivatives useful in them

Author/Inventor

Vestweber, Horst; Gerhard, Anja; Stoessel, Philipp; Spreitzer, Hubert

Patent Assignee/Corporate Source

Covion Organic Semiconductors GmbH, Germany

Source

PCT Int. Appl., 30 pp. CODEN: PIXXD2

Document Type

Patent

Language

German

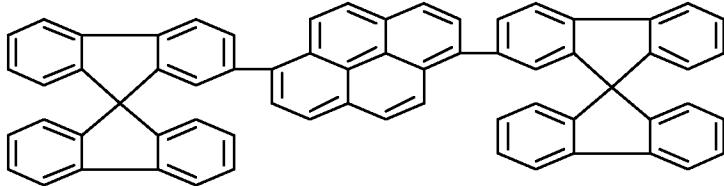
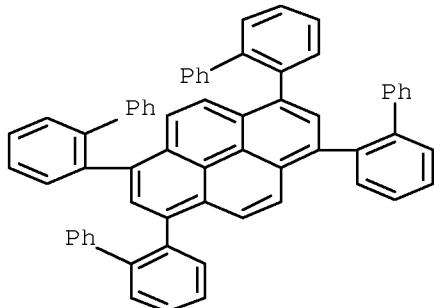
Patent Information

| PATENT NO.     | KIND | DATE     | APPLICATION NO.  | DATE     |
|----------------|------|----------|------------------|----------|
| WO 2004058911  | A2   | 20040715 | WO 2003-EP13927  | 20031209 |
| WO 2004058911  | A3   | 20051208 |                  |          |
| EP 1578885     | A2   | 20050928 | EP 2003-782338   | 20031209 |
| CN 1756824     | A    | 20060405 | CN 2003-80107453 | 20031209 |
| CN 100489056   | C    | 20090520 |                  |          |
| JP 2006511939  | T    | 20060406 | JP 2004-562714   | 20031209 |
| KR 1030158     | B1   | 20110418 | KR 2005-7009842  | 20031209 |
| US 20060063027 | A1   | 20060323 | US 2005-540461   | 20050721 |

Abstract

Organic electroluminescent devices are described in which the emitting layer consists of a mixture of  $\geq 1$  hole-transporting material and  $\geq 1$  emitting material in a weight ratio (hole-transporting material:emitting material) of 1:99 to 99:1 and that  $\geq 1$  of the substances contains  $\geq 1$  spiro-9,9-bifluorene unit. Spiro-9,9-bifluorene derivs. suitable for use in electroluminescent devices are also described.

Hit Structure

CAS Registry Number  
723285-22-1 CAPLUSChemical or Trade Name  
9,9'-Spirobi[9H-fluorene], 2,2'-(1,6-pyrenediyl)bis- (CA INDEX NAME)CAS Registry Number  
723285-24-3 CAPLUSChemical or Trade Name  
Pyrene, 1,3,6,8-tetrakis([1,1'-biphenyl]-2-yl)- (CA INDEX NAME)OS.CITING REF COUNT: 8 THERE ARE 8 CAPLUS RECORDS THAT CITE THIS RECORD  
(12 CITINGS)

Accession Number

2004368210 CAPLUS [Full-text](#)

Document Number

141:131023

Title

Organic electroluminescent devices employing blue-emitting dopants based on amine derivatives of pyrene

Author/Inventor

Seo, Jeong Dae; Lee, Kyung Hoon; Kim, Hee Jung; Park, Chun Gun; Oh, Hyoung Yun  
Patent Assignee/Corporate Source  
Lg Electronics Inc., S. Korea

Source Eur. Pat. Appl., 43 pp. CODEN: EPXXDW  
Document Type Patent

Language English  
Patent Information

| PATENT NO.     | KIND | DATE     | APPLICATION NO.  | DATE     |
|----------------|------|----------|------------------|----------|
| EP 1437395     | A2   | 20040714 | EP 2003-29661    | 20031223 |
| EP 1437395     | A3   | 20050831 |                  |          |
| KR 2004057862  | A    | 20040702 | KR 2003-20465    | 20030401 |
| US 20040137270 | A1   | 20040715 | US 2003-743778   | 20031224 |
| US 7700201     | B2   | 20100420 |                  |          |
| JP 2004204238  | A    | 20040722 | JP 2003-428297   | 20031224 |
| JP 3926791     | B2   | 20070606 |                  |          |
| CN 1535089     | A    | 20041006 | CN 2003-10124405 | 20031224 |
| CN 100481574   | C    | 20090422 |                  |          |
| JP 2007027779  | A    | 20070201 | JP 2006-245563   | 20060911 |
| US 20100155714 | A1   | 20100624 | US 2010-714639   | 20100301 |

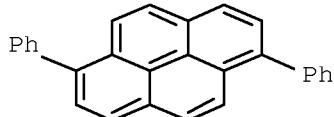
#### Abstract

Organic electroluminescent devices are described which comprise a substrate; a first and second electrodes formed on the substrate; an emitting layer formed between the first electrode and the second electrode, the emitting layer having a plurality of materials one of which being a blue-emitting dopant with general formula (I), where at least one of A1 and A2 is selected from a substituted or non-substituted aromatic group; a heterocyclic group; an aliphatic group and hydrogen. The materials forming the emitting layer together with the material of I may have a chemical formula B1-X-B2 where X is selected from a group consisting of naphthalene, anthracene, phenanthrene, pyrene, perylene, and quinoline and at least 1 of the B1 and B2 is selected from a group consisting of aryl, alkylaryl, alkoxyaryl, arylaminoaryl and alkylaminoaryl.

#### Hit Structure

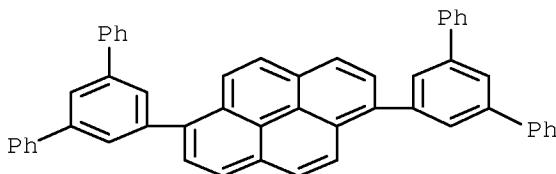
CAS Registry Number  
55009-75-1 CAPIUS

Chemical or Trade Name  
Pyrene, 1,6-diphenyl- (CA INDEX NAME)



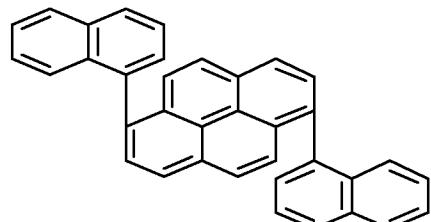
CAS Registry Number  
722498-68-2 CAPIUS

Chemical or Trade Name  
Pyrene, 1,6-bis([1,1':3',1''-terphenyl]-5'-yl)- (9CI) (CA INDEX NAME)



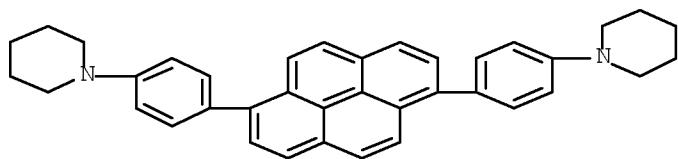
CAS Registry Number  
722498-69-3 CAPIUS

Chemical or Trade Name  
Pyrene, 1,6-di-1-naphthalenyl- (CA INDEX NAME)



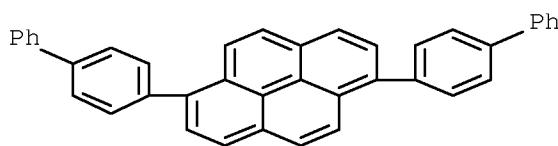
CAS Registry Number  
722498-70-6 CAPLUS

Chemical or Trade Name  
Piperidine, 1,1'-(1,6-pyrenediyldi-4,1-phenylene)bis- (9CI) (CA INDEX NAME)



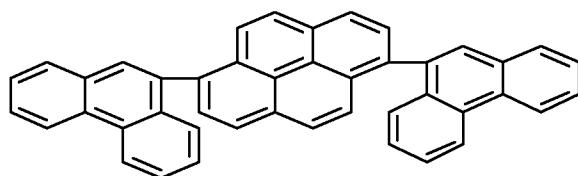
CAS Registry Number  
722498-71-7 CAPLUS

Chemical or Trade Name  
Pyrene, 1,6-bis([1,1'-biphenyl]-4-yl)- (CA INDEX NAME)



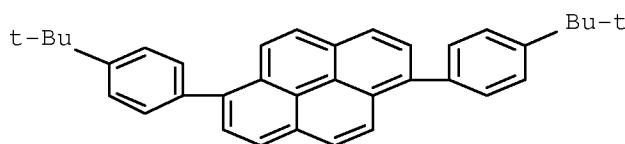
CAS Registry Number  
333489-73-8 CARIUS

Chemical or Trade Name  
Pyrene, 1,6-di-9-phenanthrenyl- (CA INDEX NAME)



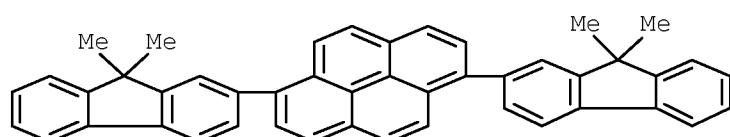
CAS Registry Number  
722498-73-9 CAPLUS

Chemical or Trade Name  
Pyrene, 1,6-bis[4-(1,1-dimethylethyl)phenyl]- (CA INDEX NAME)



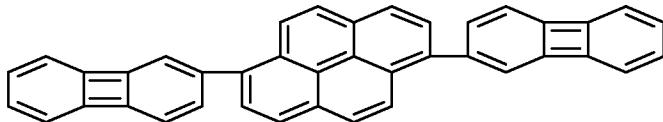
CAS Registry Number  
333488-74-0 CARIUS

Chemical or Trade Name  
Pyrene, 1,6-bis(9,9-dimethyl-9H-fluoren-2-yl)- (CA INDEX NAME)



CAS Registry Number  
722498-75-1 CAPLUS

Chemical or Trade Name  
Pyrene, 1,6-di-2-biphenylenyl- (CA INDEX NAME)



OS.CITING REF COUNT: 11 THERE ARE 11 CAPLUS RECORDS THAT CITE THIS RECORD (30 CITINGS)

L5 ANSWER 51 OF 59 CAPLUS COPYRIGHT 2011 ACS on STN

Accession Number  
2004162657 CAPLUS [Full-text](#)

Document Number  
140:225502

Title  
Oligoarylene derivatives for organic **electroluminescent** devices

Author/Inventor  
Ikeda, Hidetsugu; Matsura, Masahide; Kawamura, Hisayuki

Patent Assignee/Corporate Source  
Idemitsu Kosan Co., Ltd., Japan

Source  
PCT Int. Appl., 35 pp. CODEN: PIXXD2

Document Type  
Patent

Language  
Japanese

Patent Information

| PATENT NO.     | KIND | DATE     | APPLICATION NO. | DATE     |
|----------------|------|----------|-----------------|----------|
| WO 2004016575  | A1   | 20040226 | WO 2003-JP10071 | 20030807 |
| JP 2004075567  | A    | 20040311 | JP 2002-234833  | 20020812 |
| EP 1533290     | A1   | 20050525 | EP 2003-788055  | 20030807 |
| CN 1675149     | A    | 20050928 | CN 2003-819058  | 20030807 |
| TW 287408      | B    | 20070921 | TW 2003-122023  | 20030811 |
| US 20060134456 | A1   | 20060622 | US 2005-522546  | 20050127 |
| US 7429425     | B2   | 20080930 |                 |          |
| US 20090009073 | A1   | 20090108 | US 2008-208237  | 20080910 |
| US 20090009074 | A1   | 20090108 | US 2008-208253  | 20080910 |

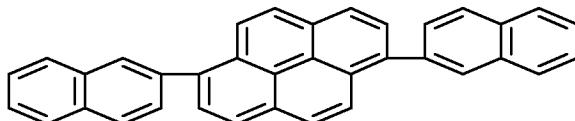
Abstract

The invention relates to oligoarylene derivs. represented by Ar1-Ch-Ar2, Ch1-L-Ch2, Ar3-(L1)a-Ch3-(L2)b-Ar4, and Ar5-Ch4-(Ar7)n-L3-(Ar8)m-Ch5-Ar6(1) [Ch, Ch1 and Ch2 = C14-20 condensed aromatic ring; Ch3, Ch4 and Ch5 = C14-20 arylene group; Ar1-6 = aryl group containing 5-30 atoms; Ar7 and Ar8 = arylene group containing 5-30 atoms; L1-3 = connecting group; and a, b, n and m = 0 or 1]. The oligoarylene derivs. are suited for use as a host material of a blue **electroluminescent** material in an organic **electroluminescent** device.

Hit Structure

CAS Registry Number  
663954-28-7 CAPLUS

Chemical or Trade Name  
Pyrene, 1,6-di-2-naphthalenyl- (CA INDEX NAME)



OS.CITING REF COUNT: 13 THERE ARE 13 CAPLUS RECORDS THAT CITE THIS RECORD (48 CITINGS)

L5 ANSWER 52 OF 59 CAPLUS COPYRIGHT 2011 ACS on STN

Accession Number  
200437438 CAPLUS [Full-text](#)

Document Number  
140:102135

Title  
Organic **electroluminescent** devices and displays with pyrene-containing vinyl polymer layers

Author/Inventor  
Ebisawa, Akira; Shinkai, Masahiro

Patent Assignee/Corporate Source  
TDK Corporation, Japan

Source  
Jpn. Kokai Tokkyo Koho, 36 pp. CODEN: JKXXAF

Document Type  
Patent

Language  
Japanese

Patent Information

| PATENT NO.    | KIND | DATE     | APPLICATION NO. | DATE     |
|---------------|------|----------|-----------------|----------|
| JP 2004014325 | A    | 20040115 | JP 2002-166962  | 20020607 |
| JP 4068896    | B2   | 20080326 |                 |          |

**Abstract**

The devices comprise organic layers containing polymers of vinyl monomers I (X1-10 = H, alkyl, alkoxy, aryl, aryloxy, heterocyclic group, amino, cyano, halogen;  $\geq 2$  of X1-10 may form rings). Organic EL displays equipped with a panel containing multiple nos. of the devices arranged in 2-dimensional arrays are also claimed. Displays giving clear images with high luminance are obtained.

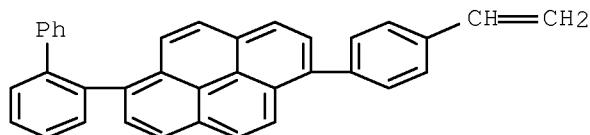
**Hit Structure**

CAS Registry Number  
643753-72-4 CAPLUS

Chemical or Trade Name  
Benzaminine, 4-ethenyl-N,N-diphenyl-, polymer with  
1-[1,1'-biphenyl]-2-yl-6-(4-ethenylphenyl)pyrene (9CI) (CA INDEX NAME)

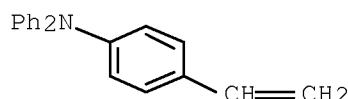
CM 1

CRN 643753-68-8  
CMF C36 H24



CM 2

CRN 25069-74-3  
CMF C20 H17 N

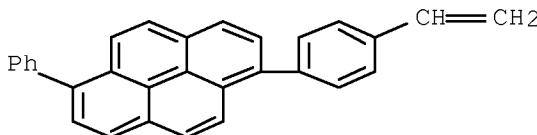


CAS Registry Number  
643753-70-2 CAPLUS

Chemical or Trade Name  
Pyrene, 1-(4-ethenylphenyl)-6-phenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 643753-67-7  
CMF C30 H20

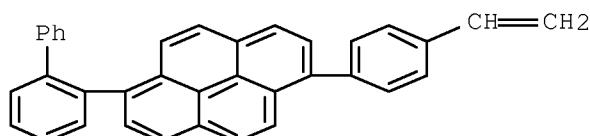


CAS Registry Number  
643753-71-3 CAPLUS

Chemical or Trade Name  
Pyrene, 1-[1,1'-biphenyl]-2-yl-6-(4-ethenylphenyl)-, homopolymer (9CI) (CA INDEX NAME)

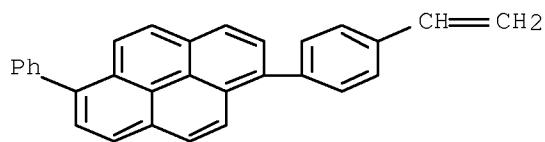
CM 1

CRN 643753-68-8  
CMF C36 H24



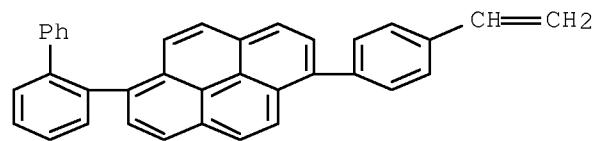
CAS Registry Number  
643753-67-7 CAPLUS

Chemical or Trade Name  
Pyrene, 1-(4-ethenylphenyl)-6-phenyl- (CA INDEX NAME)



CAS Registry Number  
643753-68-8 CAPLUS

Chemical or Trade Name  
Pyrene, 1-[1,1'-biphenyl]-2-yl-6-(4-ethenylphenyl)- (CA INDEX NAME)



Accession Number

2003912665 CAPLUS [Full-text](#)

Document Number

139:401353

Title

**Electroluminescent devices**

Author/Inventor

Xie, Shuang

Patent Assignee/Corporate Source

Can.

Source

U.S. Pat. Appl. Publ., 32 pp. CODEN: USXCO

Document Type

Patent

Language

English

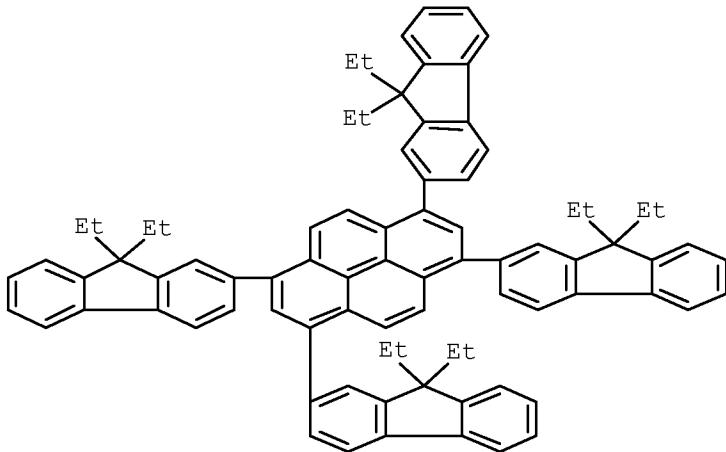
Patent Information

| PATENT NO.     | KIND | DATE     | APPLICATION NO. | DATE     |
|----------------|------|----------|-----------------|----------|
| US 20030215667 | A1   | 20031120 | US 2001-985204  | 20011102 |

Abstract

Organic electroluminescent devices are described which are provided with active layers comprising a host based on  $\geq 1$  anthracene derivative doped with  $\geq 1$  anthracene derivative and/or coumarin derivative and/or an electron injecting/transporting layer comprising a diphenylanthracene derivative with benzazole derivs. attached to the Ph groups. Application to displays is indicated.

Hit Structure

CAS Registry Number  
626236-26-8 CAPLUSChemical or Trade Name  
Pyrene, 1,3,6,8-tetrakis(9,9-diethyl-9H-fluoren-2-yl)- (CA INDEX NAME)OS.CITING REF COUNT: 5 THERE ARE 5 CAPLUS RECORDS THAT CITE THIS RECORD  
(5 CITINGS)

Accession Number

2003656268 CAPLUS [Full-text](#)

Document Number

139:204830

Title

**Organic electroluminescent elements containing organic thin layer comprising 1,3,6,8-tetraphenylpyrene derivative and a carbazole derivative, and organic electroluminescent displays employing the elements**

Author/Inventor

Kinoshita, Masaru; Sotyama, Wataru; Kodama, Jun; Okamoto, Yasuo

Patent Assignee/Corporate Source

Fujitsu Limited, Japan; Fuji Photo Film, Ltd.

Source

U.S. Pat. Appl. Publ., 19 pp. CODEN: USXCO

Document Type

Patent

Language

English

Patent Information

| PATENT NO.     | KIND | DATE     | APPLICATION NO. | DATE     |
|----------------|------|----------|-----------------|----------|
| US 20030157365 | A1   | 20030821 | US 2002-278866  | 20021024 |
| US 7060370     | B2   | 20060613 |                 |          |
| JP 2003234190  | A    | 20030822 | JP 2002-29335   | 20020206 |
| JP 3841695     | B2   | 20061101 |                 |          |
| TW 316954      | B    | 20091111 | TW 2002-124739  | 20021024 |
| KR 918548      | B1   | 20090921 | KR 2002-66343   | 20021030 |

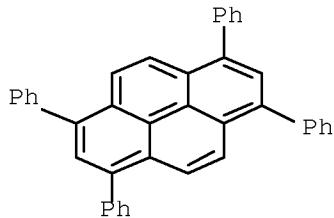
Abstract

Organic electroluminescent elements and organic electroluminescent displays employing the elements are described in which the electroluminescent elements comprise an organic thin film layer which contains a light-emitting layer between a pos. electrode and a neg. electrode, where a layer in the organic thin film layer comprises a 1,3,6,8-tetraphenylpyrene compound expressed by formula I, and a carbazole derivative expressed by formula II, in which R1 to R6 may be identical or different, and may be 1 of a H and a substituent group, Ar represents an aromatic group or heterocyclic group, and n represents an integer.

Hit Structure

CAS Registry Number  
13638-82-9 CAPLUS

Chemical or Trade Name  
Pyrene, 1,3,6,8-tetraphenyl- (CA INDEX NAME)



OS.CITING REF COUNT: 4 THERE ARE 4 CAPLUS RECORDS THAT CITE THIS RECORD  
(5 CITINGS)

L5 ANSWER 55 OF 59 CAPLUS COPYRIGHT 2011 ACS on STN

Accession Number  
2003279802 CAPLUS Full-text

Document Number

138:278143

Title

Organic electroluminescent devices

Author/Inventor

Suzuki, Koichi

Patent Assignee/Corporate Source

Canon Inc., Japan

Source

Jpn. Kokai Tokkyo Koho, 26 pp. CODEN: JKXXAF

Document Type

Patent

Language

Japanese

Patent Information

| PATENT NO.    | KIND | DATE     | APPLICATION NO. | DATE     |
|---------------|------|----------|-----------------|----------|
| JP 2003109763 | A    | 20030411 | JP 2001-300546  | 20010928 |

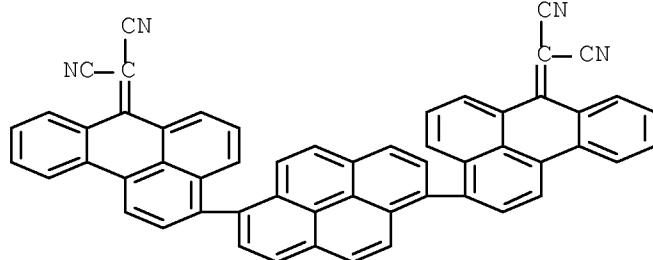
Abstract

The devices comprise a phosphor layer comprising R1-4Ar1, where R1-4 = H, alkyl, (substituted) aralkyl, (substituted) aryl, (substituted) heterocyclic, (substituted) condensed polyarom. ring, (substituted) polyheterocyclic ring; Ar1 = divalent-cyclotrifluoromethylene, fluorenylene, anthracenylenne, phenanthrenylene, vinylene, triphenylene, thiophenylenne, pyridylene, pyradylene, pyrimidylene, pyradylene, pyrimidylene, pyradaadiene.

Hit Structure

CAS Registry Number  
503472-80-8 CAPLUS

Chemical or Trade Name  
Propanediocarbonyl, 2,2'-(1,6-pyrenediylbis(7H-benz[de]anthracen-3-yl-7-ylidene))bis- (9CI) (CA INDEX NAME)



OS.CITING REF COUNT: 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD  
(4 CITINGS)

L5 ANSWER 56 OF 59 CAPLUS COPYRIGHT 2011 ACS on STN

Accession Number  
2002867325 CAPLUS Full-text

Document Number

137:377245

Title

Organic electroluminescent device containing aromatic condensed ring compound

Author/Inventor

Suzuki, Koichi; Senoo, Akihiro; Tanabe, Hiroshi

Patent Assignee/Corporate Source

Canon Inc., Japan

Source

Jpn. Kokai Tokkyo Koho, 50 pp. CODEN: JKXXAF

Document Type

Patent

Language

Japanese

Patent Information

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------|------|------|-----------------|------|
|            |      |      |                 |      |

|                |    |          |                |          |
|----------------|----|----------|----------------|----------|
| JP 2002329580  | A  | 20021115 | JP 2002-36804  | 20020214 |
| JP 3870102     | B2 | 20070117 |                |          |
| US 20020177009 | A1 | 20021128 | US 2002-77800  | 20020220 |
| US 6830829     | B2 | 20041214 |                |          |
| US 20050048318 | A1 | 20050303 | US 2004-940734 | 20040915 |
| US 6994922     | B2 | 20060207 |                |          |
| JP 2007013199  | A  | 20070118 | JP 2006-230669 | 20060828 |
| JP 4566962     | B2 | 20101020 |                |          |

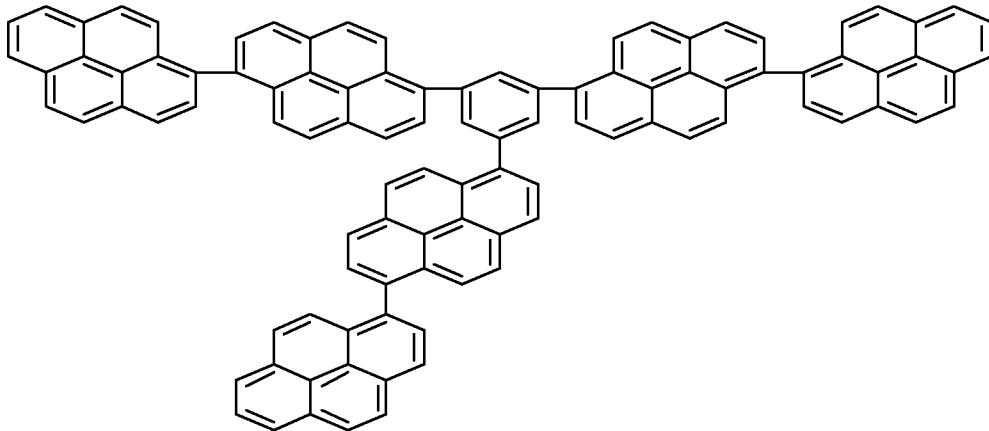
#### Abstract

The electroluminescent device has ≥1 organic layer containing aromatic condensed ring compound a benzene substituted with R1-4 and Ar1-2 (I), a benzene substituted with R5-7 and Ar3-5 (II), or a benzene substituted with R8-9 and Ar6-9 (III) [R1-R9 = H, alkyl, (substituted)aralkyl, (substituted)aryl, (substituted)heterocycle, (substituted)amino, cyano; Ar1-Ar9 = (substituted)aromatic condensed ring, (substituted)condensed heterocycle, optionally linked via phenylene], preferably claimed compds. I (R5-R7 = H, Ar3-Ar5 = LH at 1,3,5-positions, L = 9,9-dimethylfluorene-2,7-diy), II (R5-R7 = H, Ar3-Ar5 = L2H at 1,3,5-positions), III (R8 = R9 = H, Ar6-Ar9 = LH at 1,2,4,5-positions), or III (R8 = R9 = H, Ar6-Ar9 = L2H at 1,2,4,5-positions), as electron-transporting or light-emitting layers between a cathode and an anode. The organic layer in the device is useful as an electron-transporting layer, an emitting layer, and a hole/exciton-blocking layer and the device shows high emission, low driving voltage, and improved durability.

#### Hit Structure

CAS Registry Number  
475460-99-2 CAPLUS

Chemical or Trade Name  
1,1'-Biphenyl, 6,6'',6''''-(1,3,5-benzenetriyl)tris- (CA INDEX NAME)



OS.CITING REF COUNT: 17 THERE ARE 17 CAPLUS RECORDS THAT CITE THIS RECORD (27 CITINGS)

Accession Number

2002153115 CAPLUS [Full-text](#)

Document Number

136207501

Title

Organic electroluminescent device

Author/Inventor

Kohama, Toru; Nishiyama, Takuya; Makiyama, Akira

Patent Assignee/Corporate Source

Toray Industries, Inc., Japan

Source

Jpn. Kokai Tokkyo Koho, 8 pp. CODEN: JKXXAF

Document Type

Patent

Language

Japanese

Patent Information

| PATENT NO.    | KIND | DATE     | APPLICATION NO. | DATE     |
|---------------|------|----------|-----------------|----------|
| JP 2002063988 | A    | 20020228 | JP 2000-250684  | 20000822 |

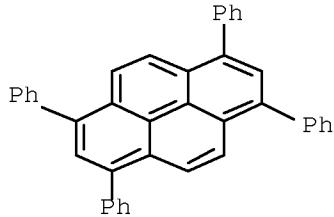
Abstract

The invention relates to an organic electroluminescent device, suited for use in making a flat panel display, an illumination device, etc., wherein the pyrene derivative with bulky substitution groups for controlling crystallization and excimer generation, is utilized as a blue-emitting organic phosphore for enhancing the luminescence efficiency and the color purity.

Hit Structure

CAS Registry Number  
13638-82-9 CAPLUS

Chemical or Trade Name  
Pyrene, 1,3,6,8-tetraphenyl- (CA INDEX NAME)



OS.CITING REF COUNT: 4 THERE ARE 4 CAPLUS RECORDS THAT CITE THIS RECORD  
(4 CITINGS)

Accession Number

2001299286 CAPLUS [Full-text](#)

Document Number

134302822

Title

Organic electroluminescence devices

Author/Inventor

Toyama, Wataru; Hayano, Tomoaki; Sato, Hiroyuki; Matsuura, Akira

Patent Assignee/Corporate Source

Fujitsu Ltd., Japan; Fuji Photo Film Co., Ltd.

Source

Jpn. Kokai Tokkyo Koho, 6 pp. CODEN: JKXXAF

Document Type

Patent

Language

Japanese

Patent Information

| PATENT NO.     | KIND | DATE     | APPLICATION NO. | DATE     |
|----------------|------|----------|-----------------|----------|
| JP 20011118682 | A    | 20010427 | JP 1999-299876  | 19991021 |
| JP 3905265     | B2   | 20070418 |                 |          |

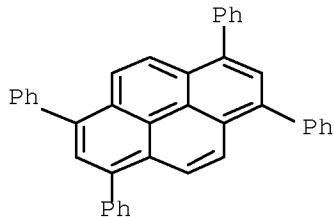
Abstract

A blue-emitting device comprises a phosphor layer containing an alkyl derivative, a cycloalkyl derivative or an aryl derivative of 1,3,6,8-tetraphenylperene.

Hit Structure

CAS Registry Number  
13638-82-9 CAPLUS

Chemical or Trade Name  
Pyrene, 1,3,6,8-tetraphenyl- (CA INDEX NAME)



OS.CITING REF COUNT: 5 THERE ARE 5 CAPLUS RECORDS THAT CITE THIS RECORD  
(5 CITINGS)

L5 ANSWER 59 OF 59 CAPLUS COPYRIGHT 2011 ACS on STN

Accession Number

2000694280 CAPLUS Full-text

Document Number

133:259476

Title

Amino or styryl compound, organic thin film, and electroluminescent device

Author/Inventor

Hosokawa, Chishio; Funahashi, Masakazu; Azuma, Hisahiro; Ikeda, Shuji; Arai, Hiromasa

Patent Assignee/Corporate Source

Idemitsu Kosan Co., Ltd., Japan

Source

Jpn. Kokai Tokkyo Koho, 30 pp. CODEN: JKXXAF

Document Type

Patent

Language

Japanese

Patent Information

| PATENT NO.    | KIND | DATE     | APPLICATION NO. | DATE     |
|---------------|------|----------|-----------------|----------|
| JP 2000273056 | A    | 20001003 | JP 1999-352216  | 19991210 |
| JP 4429438    | B2   | 20100310 |                 |          |
| JP 2010006818 | A    | 20100114 | JP 2009-188488  | 20090817 |

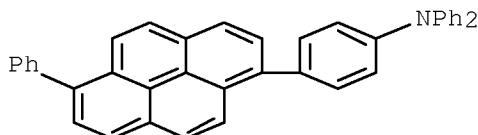
Abstract

The compound comprises D1Ar1X1(X2)n (I; Ar1 = C6-30 di- or trivalent aromatic group; X1, X2 = styryl, styrylaryl, diarylamino, diarylaminaryl; n = 0, 1; if X1 or X2 = the styryl group, then D1 = C16-60 aromatic group having  $\geq$  4 carbon rings; if X1 and X2 = the amino group, then D1 = C20-60 aromatic group having  $\geq$  5 carbon rings). I shows good heat resistance (glass transition temperature  $\geq$  90 $^{\circ}$ C) and long luminescence lifetime.

Hit Structure

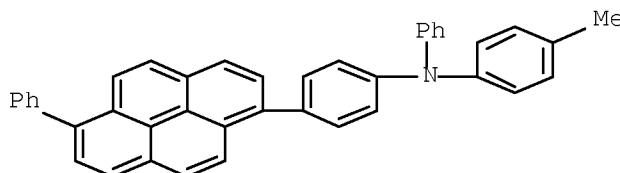
CAS Registry Number  
294881-17-7 CAPLUS

Chemical or Trade Name  
Benzanamine, N,N-diphenyl-4-(6-phenyl-1-pyrenyl)- (CA INDEX NAME)



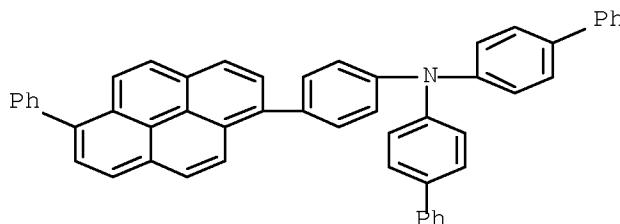
CAS Registry Number  
294881-28-0 CAPLUS

Chemical or Trade Name  
Benzanamine, N-(4-methylphenyl)-N-phenyl-4-(6-phenyl-1-pyrenyl)- (CA INDEX NAME)



CAS Registry Number  
294881-29-1 CAPLUS

Chemical or Trade Name  
[1,1'-Biphenyl]-4-amine, N-[1,1'-biphenyl]-4-yl-N-[4-(6-phenyl-1-pyrenyl)phenyl]- (CA INDEX NAME)



OS.CITING REF COUNT: 7 THERE ARE 7 CAPLUS RECORDS THAT CITE THIS RECORD  
(7 CITINGS)

